AUGUST, 1931

COTTON

Serving the

TEXTILE INDUSTRIES

Have CONDOR Muscles on Your Machines

—for Strength, Stamina and Economy

—there is a Condor Rubber Product for practically every textile mill operation

—one you can depend on to measure up to the *special* requirements of the task for which it is recommended

Send for new Condor Textyl Catalog

—the Manhattan Field Specialist will tell you how to make Condor the untiring muscles in your mill

—his knowledge is the fruit of 38 years' mechanical rubber manufacturing experience!

Condor Products are 50% Cotton

The Manhattan Rubber Mfg. Division
of RAYBESTOS-MANHATTAN, Inc.
Executive Offices and Factories
Passaic, New Jersey

AUG 20 1931 CONGRESS

They gave him up for dead

. . . . but 1931 finds him healthier than ever before

KING COTTON has been the miracle man of the business world. Given up for dead, he has come back stronger than ever before. Slowly but surely in the last few years, cottons have surged into new popularity.

And this year they attain new "highs" in fashion prominence. Never before have cottons been offered in such a variety of weaves and weights, with such finish and "feel", in such charming and colorful designs. Never before have cottons been sought more eagerly by well-dressed women!

The story of cotton's come-back has many interesting angles. But none is more interesting than the important part played by trademarking and identification.

Here are just a few of the important advantages secured by the manufacturer who trademarks his cottons:

1. *Absolute protection against substitution.*
2. *More effective advertising.*
3. *A name that builds up invaluable good will.*
4. *Steady, repeat-demand that is neither seasonal nor stationary.*

And then there is the obvious advantage of *naming* your fabric. The consumer will learn that name . . . use it when she comes back for more . . . when she buys made-up merchandise . . . when she "bridges" or "teas" with friends.

In the last few years Kaumagraph has helped many a manufacturer. In some cases we have actually created and designed the trademark. Often Kaumagraph has had the trademark registered. Always Kaumagraph has shown the manufacturer the ideal way to apply his trademark—with Kaumagraph Dry Transfers.

Kaumagraph Dry Transfers constitute the perfect method of applying trademarks to textiles with beauty, economy and absolute clarity. To facilitate the application of Kaumagraph Transfers we have designed special machinery that reduces marking costs to a negligible item. We will be glad to mail you additional information . . . or, if you prefer, we'll send a special representative to tell you more.

KAUMAGRAPH COMPANY
200 Varick St. New York City

Chicago . . . Philadelphia . . . Los Angeles
Chattanooga, Tenn. . . . . Charlotte, N. C.
Paris, Ontario . . . . . Paris, France
Manchester, England

COTTON is published monthly by W. B. C. Smith Publishing Co., Dalton and Atlanta, Ga. Subscription rates, United States and Possessions, $1.00 per year; Canada, $1.50 per year; Foreign, $2.00 per year. Entered as second-class matter at the postoffice, Dalton, Ga., under the Act of March 3, 1879.

Vol. 95 **COTTON** No. 10

August, 1931

W. R. C. SMITH, Publisher
T. W. McALLISTER, Editorial Director

ROBERT W. PHILIP, Editor

Contents

General and Technical—

Manufacturing Spun Rayon Yarns on Regular Cotton Mill Machinery---- 911
Advantages and Methods of Using Pick Counters on Looms---------- 916
How Does Your Office Treat Visitors?---------- 918
A New Era in Textiles, and Its Demands Upon the Industry---------- 919
Use of the Butted Seam by Textile Manufacturers---------- 922
Methods of Reducing "Seconds"---------- 923
Needs and Methods of Increasing the Use and Appeal of Cotton--------- 924
Trends in Foreign Cotton Production; Effects on U. S. Textile Industry-- 925
Ups and Downs with the Count (Eighth of a Series of Articles on Textile Designing) ---------- 929

Current Topics—

Talk of the Month---------- 932
What the Southern Mills are Doing-------- 934
Comment on the Cotton Market---------- 935
New England Mill Situation---------- 936
New Textile Equipment and Publications-- 937
News Items with a Textile Slant---------- 944
Notes about Men You Know or Know About 946
An Old-Timer Says---------- 949

How Other Men Manage—

Do You Really Know Your Job?---------- 951
More Discussion on Leather Top Rolls---- 952
Criticizes Recommendations for Twisting Fine Plied Yarns---------- 953
Handling High Density Cotton---------- 955
Checking Up on Orders---------- 955
Doffer Comb Speeds---------- 956
Preparing Raw Stock for Dyeing---------- 957
Cockled Yarn ---------- 958
Suggestions for Combed Yarn Layout------ 959
Controlling Bad Work from the Card Room 959
Card Settings for 20s Yarn---------- 960
Making Cleaner Laps---------- 961

Knitting Section –

Survey of Seamless Hosiery Planned------ 975
Confusion Over Alleged Patent Infringements ---------- 975
Signature Hosiery Co. to Liquidate-------- 977
Full-Fashioned Survey Notes ---------- 977
Yarn for Topper Courses---------- 979
Loose and Tight Sinker Lines---------- 981
Proper Number of Courses ---------- 982
Looping and Seaming---------- 985
Formula and Method for Bleaching Knit Goods ---------- 987
Securing More Even Tension on Heel and Toe Yarn ---------- 989
Trouble with Cut-Out Stitches---------- 989
Dyeing Full-Fashioned Hosiery---------- 990
Seamer Production on Chiffon Hosiery---- 992
Among the Knitting Mills---------- 992
The Knit Goods Markets---------- 995
The Yarn Market----------1004

Published Monthly by

W. R. C. SMITH PUBLISHING COMPANY

Atlanta, Ga.

JOHN B. SHAW, *sales manager*, 39 Grove St., Auburndale, Mass. Boston Exchange, West Newton 1031.
W. S. CUSHION, *vice president*, 506 The Arcade, Cleveland, Ohio.
JOHN C. COOK, *western manager*, Room 864, 228 No. LaSalle St., Chicago, Ill.
W. A. McGEE, *Carolina manager*, Box 1162, Charlotte, N. C.

Publishers also of
ELECTRICAL SOUTH
SOUTHERN AVIATION
SOUTHERN HARDWARE
SOUTHERN POWER JOURNAL
SOUTHERN AUTOMOTIVE JOURNAL

PUBLISHED MONTHLY
ANNUAL SUBSCRIPTION—$1.00
CANADA—$1.50; FOREIGN—$2.00

MEMBER OF A. B. P.
MEMBER OF A. B. C.

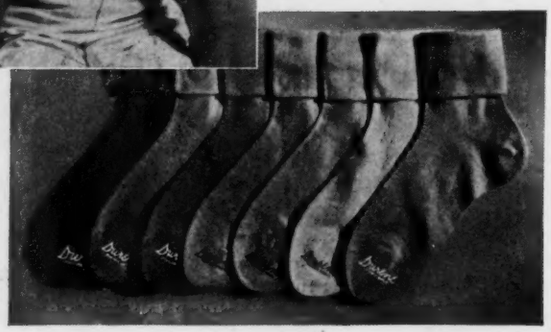
EDITORIAL AND BUSINESS OFFICES
Grant Building, Atlanta, Ga.

THESE WELL-STYLED DURENE NUMBERS ARE POPULAR EVERYWHERE

Lacey diamond mesh durene stockings — from the Dexdale Hosiery Mills.

"Summeretts" — durene vest and shorts in pastel colors and white — from the Augusta Knitting Corp.

The High Rock Knitting Company produced this fast-selling durene polo shirt.



Children's durene hosiery is soft and fine — comfortable on tender young skin — from the Hub Hosiery Mills.

QUALITY that begins with the yarn, and style that begins with the fabric — together they explain the success of the smart new durene hosiery and underwear now being produced by enterprising manufacturers.

Durene, as you probably know, is the finest combed cotton yarn, mercerized to make it stronger, more elastic, more absorptive, more durable. It has a pleasing subdued lustre, and looks like new after every laundering. The name durene instantly identifies a standard of highest quality.

The durene name has provable sales value for you. Durene is constantly advertised to your customers through a wide list of retail trade papers, and to *their* customers through national magazines. Let us tell you about the merchandising help that backs your line when you use the durene stamp or label.

DURENE ASSOCIATION OF AMERICA
250 FIFTH AVENUE NEW YORK CITY

Durene
THE FINEST COTTON
QUALITY BEGINS WITH THE YARN

MEMBERS:

ABERFOYLE MANUFACTURING CO.
Philadelphia, Pa.

AMERICAN YARN AND PROCESSING CO.
Mount Holly, N. C.

DIXIE MERCERIZING COMPANY
Chattanooga, Tenn.

HAMPTON COMPANY
Easthampton, Mass.

CLARENCE L. MEYERS, Inc.
Philadelphia, Pa.

SPINNERS PROCESSING COMPANY
Spindale, N. C.

STANDARD-COOSA-THATCHER
COMPANY, Philadelphia, Pa.

COTTON

Vol. 95 August, 1931 No. 10

Manufacturing Spun Rayon Yarns on Regular Cotton Mill Machinery

A practical description of how yarns may be made from cut rayon staple, and from cotton and rayon mixed, on customary equipment

THIS article was secured and is published in response to an increasing inquiry as to how this new type of yarn is made. That many inquiries come from cotton mill men would indicate that others in the cotton mill should study this interesting discussion, for one never knows, in these times, when a sudden change may require information on such a subject. The facts have been carefully checked, insofar as possible, and the article will give a good working knowledge of how spun rayon yarns, made from rayon waste, specially cut rayon, and cotton-and-rayon mixtures, can be manufactured on the regular lines of cotton machinery, with modifications.—The Editor.

WHEN RAYON and other synthetic fibers first came into use, the waste had practically no commercial value, and as the total production of rayon was small, there was not enough of this waste to present a serious problem. However, as rayon production increased, the volume of waste made it necessary to devise some method of utilizing it. Two principal classes of waste are made at the rayon plant: the open waste, made on the godet wheel when doffing, and the waste made in handling after the rayon is twisted.

The godet wheel on a rayon spinning frame performs the same function as the feed roll on a cotton twister. The rayon filaments coming from the spinneret pass over the godet wheel, and are fed by it to the spinning bucket. The manufacture of rayon is a continuous process, and when a bucket is ready to doff, the frame tender wraps the filaments about the godet wheel, which continues to draw rayon from the spinneret while the bucket is removed and emptied and then replaced on the spindle. This is the open waste, and consists of rayon filaments which have not been twisted together. Any incidental waste made after the rayon has passed over the godet wheel necessarily has twist in it.

In addition to the waste made in the processing of the rayon, there is a considerable amount made in mills that run rayon. From all sources, there may be several million pounds of such waste made every year. Early experiments with this waste showed that it could easily be run into coarse yarns on the woolen system, or on the spun silk system. It could also be used for mixing cotton on either of these systems. The spun silk system is too expensive a method for commercial production of rayon waste yarn, and there are few mills in this country equipped for handling spun silk. The woolen system makes a fairly good coarse yarn, but it is not practical for finer counts. It was therefore quite logical to experiment with the possibilities of cotton working machinery on rayon. At the present time, the spinning of rayon yarn has been so far developed that not only is the entire supply of rayon waste consumed in its production, but rayon manufacturers regularly supply filaments cut to definite length for spinning on the cotton system.

It may seem odd that new rayon should be purposely cut up for spinning into yarn, but as methods of making yarns from rayon waste were improved, it was found that these yarns had certain points of advantage for various purposes, over the regular yarns. They possess a satisfactory feel and sheen, and on many constructions where a loftiness and satiny finish are required, they are preferred. Cloth made from spun yarn will drape well, and it is almost uncrushable. Where fine high-grade spun yarns are preferable, it is necessary to make them of the special cut staple furnished direct from the rayon manufacturer, as it is impossible to make a high grade, uniform fine yarn from waste. The reason for this is the utter impossibility of getting waste in which the filaments are all the same denier, and all made by the same maker. Fine filaments and coarse will not run well, any more than Egyptian cotton and a harsh Texas fiber would. Also, rayon made on different systems will take dyes differently, and finish differently.

The production of spun rayon yarns, therefore, divides itself naturally into two general classifications: coarse numbers, usually made from waste, and fine numbers made from specially cut staple. If coarse yarns are to be put in anything that must take a fine finish, where irregular dyeing might show up, they

should be spun from cut staple.

We will take up first the matter of making spun rayon yarns entirely out of rayon waste or specially cut rayon fiber, and later discuss the making of a mixed yarn containing part rayon and part cotton.

Making All-Rayon Yarns.

Coming first to the matter of running rayon waste on the cotton system, there are two general methods of preparing this waste. One is to garnet it thoroughly before cutting to length, and the other is to have a wool comber put the waste into a worsted top, after which it is cut. The length of the fibers in rayon waste may be anything up to several feet, and as cotton working machines will handle only a relatively small variation in staple, it is quite necessary that the waste be cut to a fairly uniform length. Putting the waste through a garnet, or a hard waste machine and then cutting it, is not suitable for other than very coarse yarns, as the fibers are so tangled that many of them will lie parallel to the cutting knife and come out much longer than desired. Also any unopened or neppy masses will open up in the pickers and cards and cause trouble. The only way to get a uniform staple length is to have all the fibers parallel before cutting, and this can be done when the waste is put into a worsted top.

The worsted top is the form in which wool is delivered to a mill for making worsted yarns, and since wool fibers may be any length up to nine or ten inches, the same process that will straighten them out will also parallelize the rayon fibers. In making a top, the waste is put through a wool card set that usually contains three cards. It is combed on a worsted comb, and preferably put through a gill box.

Rayon waste before cutting . . . .

Of course, fibers processed in this manner will not be perfectly uniform in staple, as there will be a great many short ends, but as the stock goes into coarse yarns, this makes little difference. Whether the material to be run is processed waste or specially cut staple, the manufacturing procedure is practically the same from the picker on. In the case of waste, it is necessary to get the stock well mixed before feeding to the picker, as waste may contain a number of different deniers of rayon, and rayon made on different processes, so that if the bleaching is not thorough, a poor yarn will result. It must be constantly borne in mind that mixtures of different deniers of rayon, and rayon made on different processes, will not finish satisfactorily on flat goods. Unless yarns made under such conditions are to be well covered up in the weave, or are to be napped, trouble will result from such mixtures. Of course, for certain novelty fabrics, a streaky and irregular finish may be desirable.

After getting the stock ready to lap, it is fed to an ordinary breaker picker, and put through one finisher. Since rayon laps split easily, about six or seven ends of roving should be fed into the lap from a creel mounted above the calender. This creel should be arranged to traverse about three inches, because if the roving always runs in at the same place it will dull the licker-in wire, and cause bad carding. In starting up, if no rayon roving is available, cotton may be used. The friction on the calender rack release should be lightened as much as possible. Some carders have taken off all the friction, and have only the weight of the calender racks on the lap. Too much friction will pack the lap so tight that it will be almost impossible to pull the pin. One good plan is to slip a heavy paper tube over the lap pin, and wind the lap up on this tube, leaving it in the lap until it runs out at the card.

Points at the Picker.

The lap, upon being doffed from the finisher, should be rolled up in a sheet of heavy Kraft paper as tightly as possible, and this wrapper stuck with adhesive tape, or tied with string. This wrapper retards the drying out of rayon, and also prevents damage to the lap, and loss of stock when handling, as rayon laps cannot be handled as easily as cotton. They come apart easily, and a puff of wind will blow a good bit of stock off of an exposed lap. The lap is kept in this wrapper until it is ready to piece up on the card. After removal, the paper can be returned to the picker room to be used again.

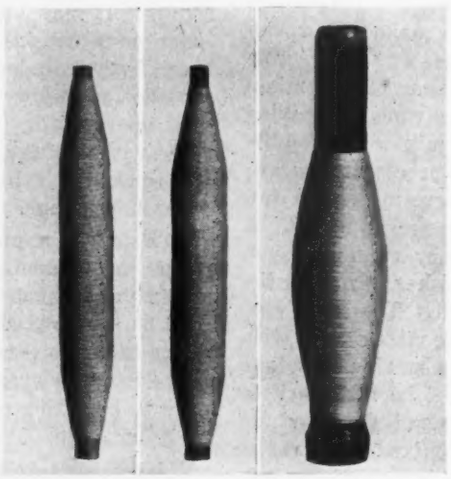
The grid bars of both pickers should be covered with a sheet metal plate, curved to fit the contour of the bars and placed on top of them. Some of the patented types of adjustable bars can be closed tightly enough to make this plate unnecessary. The rayon requires no cleaning, and is simply put through the picker to get in lap form. Some mills do not even use a finisher, but take the laps direct from the breaker to the cards. The same beater settings can be used as with cotton, and any style of beater will do, though the Kirschner is preferable, as it will lay a smoother lap than any other kind, and it will not make nits in rayon, as it will do in staple cotton. A cylinder beater is good for rayon, and is to be preferred to the blade. The beater speed should be reduced to about 400 or 500 r.p.m., or else the feeds should be increased to about twice the normal speed; the effect in either case being to reduce the blows per inch. If there is plenty of picker capacity, it is naturally better to reduce the picker speed.

It is advisable to have one or two humidifier heads of the turbo type over the hopper, and also over the lap apron of the finisher. This will prevent static, and also make better laps. Since the laps are wrapped in heavy paper, most of this moisture will be retained.

Handling on the Card.

The cards should have the mote knives covered in the same manner as the grid bars on the pickers, and this covering backed off until there is no danger of the licker-in striking. The same general settings as for cotton may be used, but the flats should be set farther away, about 22 to 24 for the flats will be right. Also, the front plate should be set to take out as little flat waste as possible, and this waste, together with any flyings under the card, may be put right back in the work. The carding should be with a short draft. A draft of 80 or 90 is enough. Short drafts should also be run on the roving processes. Remember that rayon needs no cleaning. Neither the pickers nor the cards have to do anything but get the stock in proper form for the following processes. Run everything with a short draft, from picking to spinning. The picking and carding runs best with short drafts, because there is no question of cleaning; while the drawing, roving and spinning need short drafts on account of the lack of natural spirality in the rayon fibers, which makes them harder to draft properly than cotton.

A card room running rayon needs much more humidity than when on cotton. Rayon is not only highly hygroscopic, but it mis-behaves worse than cotton when dry. A relative humidity of 65 per cent, and not less than 60 per cent, should be maintained over cards, drawing and slubbers. After the rayon is once in roving form, it is easy to handle, and gives little trouble, but until some twist is put in it a fairly high humidity is needed to keep the fibers laid.



Samples of spun rayon crepe yarn . .

Important Points on Fly Frames.

On slubbers and other roving processes, as little twist as possible should be put in. If the mill has been on coarse cotton yarn, using about ⅞-inch cotton, and tries to work rayon cut to about 1⅜-inch or 1½ inch, it will be necessary to take out from 25 to 30 per cent of the twist. However, a mill that has been running 1½-inch cotton may find it necessary to put in some twist. This is one of the most ticklish points in the whole process of spinning rayon, and must be carefully watched and experimented with until the correct twist is found.

New, enameled bobbins should be used for rayon roving, and roving should never be cut off. If straight barreled bobbins are used, with no head at the end, it is easy to slip the waste roving off with the hand. If new bobbins cannot be had, the old ones should be picked over to get the least damaged by cutting and these should be smoothed up with sandpaper and then enameled before using. You will be amply repaid for this trouble, as rayon has an almost unbelievable affinity for oil, and if an old bobbin has the least particle of oil in it, the rayon will draw it out, and there is no way of ever removing the oil stain from the stock.

At the Spinning Frame.

On the spinning, it may be necessary to take all weight off the middle roll. Mills equipped to spin fine counts, with a roll spread for long staple cotton can run rayon with a weighted middle roll if that seems to give best results, though many such mills would probably have self weighted rolls for such work. The average coarse yarn mill, with a roll spread for inch cotton will hardly be able to spread the rolls enough to make a normal rayon staple of 1⅜-inch run well, and will have to take the weight off the middle roll.

Double roving should be used throughout. The counts being spun, and the quality of yarn desired, will determine the number of roving processes. For spinning a high grade 30s roving yarn, a .50 slubber; 1.00 intermediate; 2.20 second intermediate, and 6.00 fine frame can be used. This shows the short drafts employed.

Be careful in piecing up on all frames, as poorly made piecings will cause hard ends. The ends should be rolled together just enough to hold. If tightly rolled, hard ends are sure to follow, and a lot of bad yarn will be the result.

On the spinning, a draft of 10 will give good results. A long draft here is not desirable, although on regular long-draft spinning frames rayon will run with a draft of 15 or 16. The rayon fibers have no natural twist, and short drafts will spin better yarn than long ones.

Twist factors for cotton yarns are satisfactory for rayon. Of course, fancy, or special yarns, such as crepe yarn for example, require a very high twist in either cotton or rayon, but the same twist, roll weighting, and weight of traveler that will do for cotton should give satisfactory results with rayon.

I have not mentioned the drawing frames, as these are run just as with cotton, keeping in mind the short drafts.

Spinning Rayon and Cotton Mixed.

In general, when rayon and cotton mixes are run, the procedure is the same as for all-rayon, except for the preparation of the cotton and the blending of the stocks. Cotton to be mixed with rayon should first be carded. On fine yarns, the cotton should also be combed first. In either case, the coilers are taken off the machines, and the sliver run off on the floor, or into a receptacle. If a large amount of stock is to be run, mixing hoppers may be used, setting each hopper to feed the proper proportion of stock, and

having them discharge into a common intake to the breaker. For smaller mixes, a section of floor should be thoroughly cleaned, or have paper spread over it, after which the proper proportions of rayon and cotton are weighed out and spread uniformly over this surface. If the mix is principally cotton, this should be laid down first, as the rayon will be easier to pick up on top of the cotton, than if it is on the floor. If only a small percentage of cotton is added, the rayon should be laid first. This mix is cut down vertically, and fed to the breaker hopper.

Anything thrown out on the picker or card, and any flat strips may be returned to the work, as the cotton has been carded or combed, and should be quite clean.

Can Be Mixed at Drawing.

This method is the best way to make a mix, but it is quite practicable to make mixes at the drawing frames, and of course the percentages of the mixes can be held to much greater accuracy when the mixing is done here. A drawing frame mix will be quite satisfactory for a mill having three processes of drawing, and four of roving, but a coarse mill, with few doublings would do well to stick to picker mixes. A good picker mix can also be made by running rayon and cotton laps together on the finisher, provided the percentage is 25, 50 or 75 per cent. The same procedure should be followed in lapping mixtures as with all-rayon, except that where only a small percentage of rayon is in the mix, it may not be necessary to make any provision for preventing split laps.

When cotton and rayon are mixed, the rayon should be cut to approximately the length of the cotton staple. These mixes may be in widely varying proportions, depending on the purposes for which the yarn is spun. A blanket filling with only 10 to 15 per cent rayon will brighten up a blanket perceptibly when it has been napped, as the napping exposes enough rayon fibers to give a glint to the surface. Flat goods would hardly show so small a percentage of rayon. When running fine counts, a small percentage of cotton will help the running of the work. Ten to fifteen per cent of combed cotton will make the work run better, and increase the breaking strength on fine yarns. In between these two extremes in the proportions of cotton and rayon may be almost any combination. Adding cotton to cut rayon staple will lower the cost of the yarn as well as improve the way it runs, and a small percentage of cotton will not detract from the appearance of the yarn, but if too much cotton is added, the yarn will not have the desirable qualities of spun rayon, and will bring a lower price.

The breaking strength of rayon yarns as compared with cotton will vary considerably. Coarse rayon yarns will generally be stronger than cotton. Naturally, if a coarse yarn that would normally be spun from ⅞-inch cotton is made of 1⅜-inch rayon, it will be much stronger. As the counts become finer, the difference in break becomes less, and in the fine numbers cotton is stronger. This is because the staple length is about the same for rayon and cotton, and the cotton, having natural spirality, will spin up with more friction between the fibers than in the case of the smooth rayon filaments.

Warp Preparation.

Spun rayon warps should be run with a very light sizing in the slashing. Coarse warps may be run without slashing at all, but finer counts require sizing. Some mills have gassed their warps, and run unsized, but this is not very satisfactory. Cotton yarns can be permanently smoothed by gassing, but since the rayon filaments are almost perfectly smooth they will not be as firmly embedded in the body of the yarn as will the cotton fibers, so when the ends are singed off, the fibers have a tendency to fuzz up again.

Spun rayon warps may be dressed with the same sizing compounds used for cotton yarns of similar counts. It may be necessary to cover the large cylinder on a cotton slasher with laundry cloth, or to cover both cylinders. Or, a reduction in the steam pressure may lower the temperature enough to prevent too-rapid drying. Slashers should preferably be fitted with positive drives, and if these are not on the machines, the cylinders should be mounted on anti-friction bearings.

There are a number of interesting miscellaneous points in the handling of spun rayon. For very coarse mixed yarns, such as blanket filling, the rayon waste may be prepared simply by putting it through a hard waste machine, and then cutting it to staple length. Since the percentage of rayon is small, it is not necessary to have this cut as uniformly as where all-rayon is being used. The preparation of the worsted top costs about fifteen cents a pound, and this is a prohibitive expense in the preparation of waste that may not have cost more than nine cents.

Miscellaneous Pointers.

When having rayon tops prepared, it is important to have this done by a comber who is thoroughly familiar with this work, as wool working machinery is always full of wool grease, and rayon run through these greasy machines will be so stained that it may be almost worthless.

When mixed rayon and cotton is run, it is generally possible to mix them and dye the mix before running. Straight rayon, or mixtures, may be dyed in the yarn or the piece, by regular cotton dyeing methods.

Protect rayon in process from oil at all times. It will take up oil from the slightest exposures, and this oil cannot be removed. Rayon roving should never be put in old, oil-stained doffer trucks. Use new ones, or re-finish the old ones inside.

Like cotton, the finer the count of yarn, the finer the fiber needed, and the fine counts of spun rayon require a very fine denier filament. Rayon waste is likely to contain all kinds of mixed denier, and the worse the mixture, the coarser must be the yarns it is used for. Thread waste collected from mills using only fine-filament rayon can be spun into 30s yarn with little trouble, but in counts finer than this it is usually necessary to use cut staple if a quality yarn is desired. For numbers up to 60s, 1.5 denier per

filament will make a good product, and it is possible to spin 80s with this stock. Finer counts, up to 100s, can be spun from 1.2 denier per filament. This is the finest filament now being produced commercially.

It is difficult to forecast the future possibilities of spun rayon yarns. The chief obstacle to their production at this time is the scarcity of cut staple, as only one domestic manufacturer is making this in any quantity, and the price is about the same as the regular rayon thread yarn. Increased knowledge and experience in the making of cut staple should certainly lower the cost, and if this can be reduced to the point where there is a considerable differential between thread yarn and cut staple, there should be a big field for spun rayon. The economic production of cut staple requires special machinery in the rayon plant, but this machinery is simple, and much less expensive than the rayon spinning frames. Rayon for cutting is simply drawn from the spinnerets and wrapped on a swift, without twisting. Since the spinning is expensive, and involves some waste and makes some imperfect yarn, and as subsequent inspections are expensive, and result in rejecting some material as imperfect, it should certainly be much cheaper to make rayon filaments for cutting up, as there are no imperfect filaments, and no inspection on this product.

As dozens of fine cotton yarn mills have idle spinning plants, there is no lack of equipment for spinning rayon yarn, and a suitable lowering of the cost of producing the cut staple may easily change the whole complexion of the situation, and tremendously increase the volume of rayon output. In speaking of rayon in this article, it should be understood that all forms of synthetic fibers are included, as rayon forms the largest proportion of the output of this group, and I have used that commonly accepted term to include the whole range.

This description covers the running of rayon, or rayon-and-cotton mixtures, on the cotton system, where uniform staple length is essential to the success of the method. All-rayon waste, or mixtures, can be run on the woolen system quite simply. The waste is merely garnetted to break it up to moderate lengths and is fed directly to a two or three-card set. The roving is taken off with a tape condenser, and may be spun on either a mule, or on a Pease frame. The woolen system is not suitable to fine yarns, nor to making smooth, even yarns in the coarse counts. This is to be expected on account of the great variation in the staple length of the stock, and the lack of drafting and doubling.

Anyone expecting to run yarns such as have been described should get definite advice from the rayon producer from whom they get their stock. I have attempted to cover some of the most important and interesting features of rayon yarn spinning, but in a brief article of this kind it is not possible to give all of the detailed information that might be needed for putting a mill on some special counts of yarn, and information from the rayon maker will be helpful.

A group of operatives at the Erlanger Cotton Mills, Lexington, N. C., wearing cotton uniforms made from cloth woven at the mill . . . . . .

COTTON for workers' uniforms is being stressed by the Institute and other leading agencies in the textile industry. The accompanying photograph shows a group of the operatives at the Erlanger Cotton Mills, Lexington, N. C., wearing cotton uniforms, in the making of which 5,300 yards of cotton fabrics were used. It is understood that other mills have affected similar plans, and undoubtedly the adoption of cotton uniforms by cotton mills generally would add materially to existing markets for cotton cloth, says Mr. Sloan of the Institute, who points out that the smart appearance and improved morale should appeal to executives in other industries and thus provide a basis for still wider demand.

J. M. Gamewell, treasurer at Erlanger, furnishes the following information concerning their use of cotton in this way. The goods is 100x60 carded broadcloth, manufactured in Erlanger Mills and finished at their own finishing plant. The cloth was sold directly to employees on a basis of gray market price, including commission, plus finishing and dyeing charges, plus converter's commission, plus one cent per yard for handling to individuals. One hundred per cent of the female employees are wearing the uniforms, there being a total of 334 individuals now owning a total of 1,336 uniforms. Four yards of material were required for each uniform, and the average cost for making up each uniform plus material amounts to 50 cents, although fully half of the women made their own uniforms. All uniforms are made exactly alike, except for different colors used for different departments. All skirts hang 12 inches from the floor.

Advantages and Methods of Using Pick Counters on Looms

By Lawton P. Duncan
Superintendent, Inman Mills
Gen. Supt., Riverdale Mills.

A brief and straight-forward talk by a practical mill man as to the usefulness of pick counters in his weave room. Of particular interest, in addition to his comments concerning the counters themselves, are his descriptions of the forms which he uses and which are reproduced herewith, for "spotting" looms that are lagging in production.

THERE HAS never been a time in the history of the textile industry when more careful attention to details that would tend toward better manufacturing was necessary, and I doubt if there was ever a time when these details received anything like the attention they are getting today. We have reached the place where each machine must produce the absolute maximum, and we have turned our thoughts to machines and machine appliances that will enable us to reach that highest possible efficiency. This article will deal with one of the appliances that have helped those of us who have them to know more about what each loom does daily. Pick counters enable everyone concerned (and all of us are concerned) to know definitely what efficiency each loom in the plant gets for any given period.

The best method to bring out the greatest number of points for and against pick counters is by comparing looms equipped against looms not equipped on a day and night running basis. The more complicated the job, the greater the need for pick counters and the greater the benefit that will be derived from them. The mill that does a great deal of changing (and who doesn't today) and has a great many styles will be used as the basis for the discussion.

The mill without pick counters can never know as quickly nor as accurately what the looms are doing. All the cloth must be weighed or measured after it has been taken off the loom before any definite idea of what efficiency those looms have gotten can be determined.

Quite a long time ago most of us got away from the old method of paying weavers and fixers by the loom or day because we realized that in this method there was unfairness to both employee and employer. This called for some method of paying by the piece or by the amount of work actually produced. The system most commonly used was to pay by the cut or by the pound. This system was fair for paying so long as the looms were run by only one man, but if these looms are put on a double shift and still further complicated by spare weavers, it is almost impossible to pay each weaver for exactly what he did. This in practically every case called for the cloth to be measured, which caused a great deal of trouble and expense. Certainly to pay by the pound or cut and divide the total cloth equally between two weavers is not right because it is impossible to have two weavers of equal ability and energy on the same set of looms.

I heard an example of this that brings out very clearly what I am trying to explain. The looms had been running night and day for some time, and the cloth was being equally divided between the day and night weavers. These two weavers had been on the same looms for some time, and apparently everything was all right. Pick counters were put on the looms, and the second week after their installation, one of the weavers came to the superintendent complaining that he was making $1.50 a week less than he had been making. The superintendent began an investigation, and found the looms had produced practically the same as before and that the other weaver was making $1.50 more a week than he had when the cloth was be-

PICK SHEET FOR WEEK ENDING_____ SECTION Nº_____
PICKS DAY_____ _____PER CENT
PICKS NIGHT_____ _____PER CENT

LOOM Nº	START	MON.	NIGHT	TUES.	NIGHT	WED.	NIGHT	THUR.	NIGHT	FRI.	NIGHT	SAT.
	A											
	B											

Fig. 1. Section of daily pick board, to be made of sufficient size to cover desired number of looms . . . . . .

WEAVE ROOM REPORT FOR_____WEEKS ENDING_____193__.

	DAY				NIGHT					
SEC. No	LMS. RUN	100%	PICKS	% PROD.	LMS. RUN	100%	PICKS	% PROD	AVE. % PROD.	

Fig. 2. Section of report which shows superintendent and overseer the daily efficiency of each section . . . . . .

ing equally divided. This shows very clearly that an equal division was not a fair division. Soon after this was explained to the weaver making the complaint, he got busy and brought his production up as high as that of the other man.

Another method commonly used was to measure the cloth and pay each man for what he had woven. This is very expensive and calls for a good deal of bookkeeping.

Neither of these methods is without serious fault, therefore let us consider the same looms equipped with pick counters. You will excuse this if I get down to the method used in our mill because naturally it's the system we think best or we would change.

The weavers are paid by the one thousand picks, and the loom fixers are paid on a percentage basis; that is, for each one per cent increase above a certain figure the fixer gets a higher rate. We figure all productions from the fixers' sections. To make this simpler, we have each loom number begin with the numeral that designates the section number and following this section numeral, the looms are numbered from 1 up to the number of looms on that section. For example, loom No. 926 means Loom No. 26, Section No. 9, etc.

Each section has a pick board arranged as in Figure No. 1. The counter reading at the beginning of the week is marked with ink in the column marked *A*. A few minutes before time for shifts to change, each fixer reads the counters on his section, marking the counters reading in pencil in Column *A* under the day. These boards are then sent to the timekeeper and by subtracting from the last reading the previous day's reading, the net picks are gotten and put down in Column *B* in ink. This is done just as quickly as possible and the pick boards are sent back to the weave room. From these boards, second hands, loom fixers and weavers can see exactly what each loom did the day before. We get these boards back to the weave room by 9:00 A. M. the following morning and for the night shift they are posted by the time the night shift comes on in the afternoon.

The overseer and second hands look over the pick boards, making notes of low producing looms on each section, and as soon as possible, get around to these looms to try to determine why they failed to get the standard picks. The loom fixers do the same thing which prevents the same looms from continuing to be low producers. Then the weaver can see at a glance exactly what production he got, and can tell within a few cents of what he made. The same thing is ready for the night shift. Very often those low producing looms can be made high producers simply by correcting harness settings, rough shuttles, or any one of the multitude of things that cause excess loom stoppage.

Every morning by 9:30 A. M. the efficiency for each section is placed on the weave room overseer's and the superintendent's desks. The weak spots, therefore, are pointed out and receive attention from both. These section reports are accurate and make it possible to follow efficiencies day by day. Being able to follow each day's total efficiency, section efficiency down to individual loom efficiency, helps to make possible higher production. This daily report to superintendent and overseer of weaving is shown in Fig. II., and does not need any explanation.

One of the biggest problems we have today in the average weave room is to keep the mechanical condition of the looms as they should be, and this is helped materially by the check method explained. Low producing looms are very often looms in poor mechanical condition.

Spare weavers are paid by the pick the same as the regular weaver which in itself makes better weavers of spare weavers than if they were paid by the hour as is the usual method without pick counters.

Where the method of reading them at the change of each shift is used, double counters are not needed. I would not think of having mine read once a week because the best report I get is the section efficiency report that comes from this daily reading.

Pick counters are the same as other things in that we get from them in proportion to the way we use them. Properly used to check up on low producing looms, they will pay for themselves in a comparatively short time in increased efficiency and saving supply parts. They give us a fair method to pay weavers and thereby reduce dissatisfaction to a minimum.

Needless to say, most of us need all the help we can get to obtain higher efficiency and I know of nothing that will help by pointing out weak spots as will pick counters.

How Does Your Office Treat Visitors?

Another "short, short story," discussing a common shortcoming of many mills.

Reading time: About five minutes.

A FRIEND told me recently of receiving an invitation from the superintendent of a cotton mill to pay him a visit. He accepted and sometime later went to the mill which was about fifty miles away, and inquired at the office for his prospective host. There were four or five men in the office, and none of them paid the slightest attention to his arrival. After a brief wait, which promised to be interminable unless he did something about it himself, he ventured to ask if Mr. So-and-so was in, and one of the office men, with no particular enthusiasm, advised that this gentleman was in the mill.

A little questioning developed the fact that Mr. So-and-so would probably be in the mill all morning, and that it was not good form to send for him, as he did not care to be annoyed when he had sought refuge inside the plant. So, the guest sat down and waited a couple of hours for his host to come back to the office. The episode did not make a very favorable impression, and my friend asked me, as one having a wide acquaintance with cotton mill executives, if this sort of thing was common.

I am sorry to say that it is. While there are many mills that have a policy of treating all visitors with courtesy, and assisting them to transact their business with dispatch, there are a great number who have an attitude of the utmost indifference to callers. These offices probably reflect the quality of the management of the mill, and a poorly run, inefficiently operated office, staffed with indifferent and often discourteous help, gives the impression that the mill is run along the same lines; as it frequently is.

Receiving visitors is just as much a part of the routine of running a cotton mill as receiving cotton or shipping cloth. The visitors are going to come; there is no way to keep from having to take care of them in some way, and there is no excuse for not taking care of them efficiently. The large majority of these visitors are indirectly on the payroll of the cotton mill industry, so why waste their time? Every salesman who manages to stay on the road has to get his traveling expenses out of his customers. The more time he wastes, the more salesmen his firm must use, and the higher the selling expenses, which means a higher price in the long run on his goods.

The average better class salesman costs a good bit more to keep on the road than the cost of a good cotton mill superintendent, and as most of the salesman's time is spent getting around from town to town, that portion which he spends in cotton mill offices is very valuable. A good salesman's actual working time is often worth $20.00 an hour for the actual time he spends talking to customers. Few mills that have a $20-an-hour executive on their payroll would care to waste his time. Yet many mills will thoughtlessly keep a salesman waiting for hours to dispatch business that could have been taken care of in minutes if the ordinary rules of courtesy had been observed. And don't forget that every salesman is on the payroll of the industry, and that every minute of his time is paid for by the industry.

Only a few days ago I called at an office where it was necessary to see the superintendent regarding some information about an order that had been given to me, and which the superintendent was anxious to have attended to promptly. He was in the mill, and I asked the watchman if he could get word to him that I was there. The watchman very discourteously and even insultingly replied that he could not be bothering Mr. Blank when he was in the plant. I tried the treasurer's office, and he was in the mill too. Finally, I found a girl who knew something about the order in question, and she told the watchman to get the superintendent for me. If I had not been so insistent about it, I might easily have waited over two hours until lunch time would have brought my man out of the mill.

Every salesman has these experiences. They waste his time and wear out his patience. And in almost every case they are unnecessary. One of the largest and most efficiently run mills in the South has very strict rules about taking care of callers promptly and carefully. They will immediately find anyone, from the president on down, no matter where he is in the plant, or who wants to see him. I have called at that plant years ago, when no one there knew me well, and in the brief time necessary to find the agent, and get him to the office, three or four of the highest officials of the company would see me sitting on the callers' bench, and ask me if I had been looked after. This particular concern has a widespread reputation for being hard boiled, but they believe in running the office as efficiently as the plant, and realize that promptness in the handling of one phase of their business is just as important as in handling any other. This has been one of the most uniformly successful mills in the industry.

Courtesy costs nothing; not even an effort. It is just as easy to cultivate a courteous attitude as a discourteous one, and courtesy begets courtesy. Almost every successful salesman is courteous and considerate with any customer who lets him be that way. But some persons in executive positions are so studiously indifferent, and even indecent to callers that even the most cordial salesman gets his hackles up. Under such conditions, the transaction of business is almost impossible. The salesman cannot be natural under such conditions, and is almost certain to offend the customer, as most of this type are arrogant, conceited, and with a high-and-mighty complex. The salesman, who may be the most courteous, affable fellow in the world if decently received, is bound to resent discourtesy and indifference, and the successful transaction of business in such an atmosphere is just about impossible.

A New Era in Textiles and Its Demands Upon the Industry

THIS analysis of present conditions and future requirements in the textile industry was written by a prominent southern mill executive, in an effort to present clearly the demands of this New Era in which the industry is surely, and rather rapidly, finding itself. He analyzes those elements which make up a successful mill organization, from the standpoint of equipment—both personal and mechanical—and policy.

That, even in these trying times, there are mills able to make a good showing, is pointed out, and the author endeavors to present those things which each individual mill must do in order to qualify for this select group . . . . . .

TWO AUTOMOBILES traveling the same road, in the same direction, and at the same rate of speed, will maintain the same relative position towards each other as long as these conditions continue. In order for the car behind to pass the car in front its speed must exceed that of the leading car for a sufficient length of time to permit of this operation. But this is a race and the driver of the front car does not want to be out-distanced, and is calling on his machine for everything that it will do. The outcome will depend on two important factors: the superiority of one machine over the other and the skill of the drivers.

This simple illustration is intended to describe the attitude of the writer of this article in his treatment of conditions existing today in textile manufacturing. To my mind, these conditions justify the statement that a race is on and that every producing unit is an entrant. The field may or may not be crowded but that does not matter so far as this article is concerned. The present unsatisfactory condition of business may have slowed up the track and made the going hard, but that deos not alter the fact that the race is being continued.

This article is written with an understanding of the progress that is being made by almost every mill. Fourteen years ago when I had finished school, I started working in a mill that was at the time chiefly concerned with the problem of re-conditioning its property. The operation and upkeep of mill machinery was not then standardized to the extent that it is now and it is probable that many mills had fallen into evil ways and permitted their property to run down during the lean years immediately preceding that time. At any rate I found that the problems of my mill were typical problems, whatever the cause, and that almost every other mill that I knew anything about was following a similar program to the one that we had adopted. During the years that have followed we have seen much progress and we may now say that many factors governing the operation of a mill are fairly well standardized and the whole industry has advanced in a way that should be highly pleasing to all of us.

In the accomplishment of this it is but natural that we should have become somewhat confused. It is impossible for the driver in a long race to keep up with his exact relation to other contestants and he must depend on information from outside sources for this. The same condition applies in the race for supremacy in textile manufacturing and the determination of policies or tactics cannot be properly done unless we have the right perspective. For the most part, too, we mill executives are an opinionated lot and we get so completely wrapped up in the everyday problems of our work that we are not conscious of what is going on about us and our pride in the work that we and our organizations are doing will not allow us to admit that we are behind in our manufacturing methods or that any other mill on similar work is doing much more than we do.

Since the purpose of this article is chiefly to point out some of the opportunities that may be observed at the present time and in order to further clarify my viewpoint, attention is called to the fact that during the past few weeks we have noted the observance of National Cotton Week which was sponsored by the national government, also the cotton festivals which have been held in a number of southern cities, all for the purpose of stimulating interest in cotton goods. The public has therefore come very naturally to ask, "When will the cotton manufacturing industry come back," and almost all of us have been called upon from time to time by our lay friends to answer some such question, generally asked in a spirit of sincere interest. Recently, I attempted this answer which fairly describes my view: "Some have already come back and it is a problem for the individual mill."

In order to justify this statement in the opinion of another manufacturer, reference is made to a comparison of manufacturing costs of a number of mills making the same class of goods, all in the same approximate location. Such opportunities for comparison have been available to many and frequently differences of fifty per cent may be noted. Since all of the mills whose figures were used in the comparison made by the writer were using the same cost accounting methods, any factor of variation which might otherwise have come in to destroy the value of the study, were not present in this instance. Variations in wage scales of mills in the section in which these mills are located are only slight and we must therefore go beyond this point in order to understand the differences which are presented. Since this is typical of a condition to be found almost anywhere today, we must conclude that there is no uniformity of manufacturing costs and the reason is to be found in the fact that the mills in the lower brackets have outdistanced their competitors and in so doing are setting new standards of efficiency in every phase of plant operation. Even

now they are able to operate within the narrow manufacturing margins which exist at current prices of goods.

To have accomplished this while many important and heretofore leading mills were making what we will call normal progress, has put the present leaders well out in front of the field. This has been a startling accomplishment, the realization of which has left many of us dazed. Since other mills have failed in their effort to follow the leaders we conclude that their formula is not yet fully understood. A study of some of the characteristics of the leading mills will help us to understand their advantage and a mention of the failure of others might help us to avoid their error.

The two important factors in this situation are the equipment of the individual mills and the effectiveness of their organizations. An unusually capable organization might operate a mill in a manner that is superior in every way to the results obtained by competitors who are much more advantageously equipped. That they are able to do this does not alter the fact that with the additional advantage of better equipment they would be more definitely ahead. A combination of the advantages of a superior organization plus that of modernized equipment is essential and this we find to be true of the leaders. Starting with organizations that were right they have made proper selection of various items of new equipment, retaining as much of their old equipment as could be kept in good operating condition without handicap. It is evident that conditions in the individual plant would determine just where the line should be drawn in deciding on the retention or replacement of any item of equipment and mention is made of this merely to indicate the importance of creating just as near an ideal condition of plant and equipment as possible under existing conditions. Later on I shall try to analyze this phase in a way that will establish in our minds the significance of recent developments and to indicate some of its possibilities.

IT MAY seem inconceivable that a comparison of manufacturing costs of a number of mills making the same class of goods, all in the same approximate location, will disclose differences of as much as 50 per cent. But that this is true is clearly shown by the writer of this article.

The author also gives some of the major reasons why such a vast difference exists between mills operating under apparently the same condition, and leaves the thought that whether your mill is to be in the high-cost bracket, or the low-cost bracket, is dependent very largely upon whether you apply to your conditions the very fundamental and cardinal principles of modern management outlined in this article . . . . . .

Of the two prime factors with which we are dealing it would seem that the human factor is the more important and that the first step in a program of betterment would be a careful study of the executive and operating organization. The scope of this article will not go beyond this point, as a very definite distinction exists between the work of executive or key men and that of actually performing the work of production. That every individual should be well qualified by reason of training and experience is of course necessary, but their effectiveness will depend on more than this. There must be a clear understanding of the plan of organization and responsibilities must be so defined that overlapping, interference and confusion may be avoided.

Many instances of failure are to be found that may be understood in terms of the foregoing. As an example, let us take a mill that is not hampered by reason of any financial stringency but is amply able to provide any items of equipment that may be needed. They are aware of the advantages to be gained in this manner and we find them equipped so that little else could be desired and a comparison of their equipment with that of the leading mills does not disclose any great differences. In addition they have employed the best efficiency methods known which involved a careful study of every operation and contemplated revisions that would eliminate lost motion.

The first indication of trouble is when the operatives show resentment for the methods used in their efficiency work and strike. But the management assumes a generous attitude and agrees to abandon this if they will go back to work and under these conditions the plant resumes. The strike leaders, however, are impressed with the easy victory they have won and wish to retain the power they have gained. Their hostility is evident on every hand and finding some encouragement from other operatives they become chronic troublemakers. A show-down is imminent and when it comes these leaders have a strong enough following to precipitate another strike. This time the plant is idle for more than two weeks and when it resumes the troublemakers and their followers are not allowed to return to work as was previously done.

At this stage it would appear that the atmosphere would have been so cleared as to permit and even demand work of a constructive nature so that failures of the past might be entirely overcome, but this was not done. Here is a mill that appreciates the advantages of modernized equipment and its efficient operation; still they are not among the elect. What is the trouble?

A study of their organization reveals that although the key men have the necessary qualifications for the proper performance of their duties, still they are so confused and condiditions generally are so unstable that results are not satisfactory. Individually they feel insecure and, try as they may, they cannot command the confidence and enthusiasm that all of us must have in order to do our best. The solution of our problem would seem to lie in an understanding of the causes of this condition, what are they? The duties and responsibilities of the key men are not clearly defined, and interference, confusion and indefiniteness are the result. In addition to this, policies and methods which place the company in an attitude of a ruthless and unappreciative employer sponsored by one of its executives are sufficient to destroy any good that might have been accomplished by others and improvement is not to be expected until these conditions are changed.

Now, in contrast, we will take another actual case, a mill that is in many respects similar to the one men-

tioned and in the same section. Both were built at about the same time, are about the same size, and their equipment has been modernized to about the same extent and they too have employed the best efficiency methods with early misunderstandings and labor trouble, but where one mill failed the other succeeded. This would appear to be contradictory unless we compare their organizations.

Instead of the confusion and general lack of confidence, we find that every man from the president down has his responsibilities clearly defined so as to cover every phase of the business, and individual employees are judged according to their merits. This mill is now a leader in its field and its outlook is bright even in the present unsatisfactory conditions.

The two mills that we have compared represent the vast differences sometimes encountered in the effectiveness of mill organizations under conditions of marked similarity and offer an almost perfect illustration of the value of the co-ordinating influences which are sometimes disregarded or treated as though of minor importance. The causes of delinquency are many and it would be entirely wrong to allow the impression that the mill used as an example of inefficiency is typical. There are too many ways that an organization can become demoralized, but the effect of demoralization is always the same whatever the cause, and the best results cannot be obtained under any other condition than that of complete harmony. This should lead us to the easy conclusion that the problem of organization betterment should come ahead of anything else and that a study of some of the more general causes of ineffectiveness would here be profitable.

TWO certain mills, referred to in this article, were operating under about the same financial and mechanical conditions. Both experienced strikes as a result of misunderstandings in connection with efficiency methods. One was able to settle the difficulties satisfactorily, whereas the other failed to do so.

The reasons for the success of the one as against the failure of the other under comparable circumstances, are stressed by the writer of this article as the difference between success and failure on the part of every mill under the more stringent conditions which the industry faces in the future . . . . . .

Probably the most common of all of these at the present time is that of inadequacy. Traits of character which are commonly associated with individuals frequently become outstanding in the case of a group that is closely associated for some common effort. Among the more desirable of these that may be cultivated are those of thrift, thoroughness, loyalty, enthusiasm and confidence and we are able to find many mill organizations that typify these to a very noticeable degree, contributing to their success with as much certainty as is the case with individuals.

On the other hand, we find undesirable traits that spring up as a result of any let-down and the effect of these is detrimental. When an individual is overloaded with work for a considerable period of time thoroughness is generally sacrificed and if this condition is allowed to continue carelessness will be the inevitable result. This also is true of organizations, and any compromise which has been made in order to meet the present urge to reduce expenses may be expected to have the opposite effect if the key men of the organization do not have sufficient time to do their work thoroughly, even to a degree that was not considered necessary in better times. Our conclusion is based on the fact that few are trying to strengthen their organizations at the present time and in many instances we find that they are actually allowing them to deteriorate. This is an easy error to make and the results may not be immediately noticeable.

Another frequent cause of failure is to be found in the fact that many organizations are built up around an individual star. In a football team we know what this will do. There must, of course, be someone to call the right play each time, but there must also be a sufficient number of ball carriers to present a versatile attack and the execution of other offensive and defensive moves should be left to the judgment of individual players who have been properly coached. This is not meant to suggest that the closest supervision over every phase of the business is not needed, but rather that the work of the entire organization needs to be co-ordinated before maximum effectiveness can be expected. The determination of policies, methods and a general plan of operation that will define the scope of each one's responsibility is essential to prevent confusion and may be expected to improve conditions.

A quick advantage could be gained by many mills by the employment of someone, at least temporarily, whose sole duty it would be to work out every form of saving that could be found and in a way that would not interfere with the every day problems of operation. This has come to be known as efficiency work but the name is more confusing than otherwise and sometimes creates antagonism that might otherwise be avoided. Some of this has been done by outside engineering organizations with good results, but the more general approach has been through the regular operating organization in the form of economy drives which are more or less spasmodic and are lacking in completeness because of the limited amount of time that can be spared. For the best results, this should be undertaken either by an outside firm or by the employment of someone whose training and experience would qualify him fully for a careful study of every detail. Of equal importance is the requirement that he be practical in his judgment and tactful in manner so that his suggestions may become immediately operative. Many mills have undertaken this work with the assignment of men of subordinate rank from their own organizations but this has some strong disadvantages. They would not wish to have their books audited by one of their own bookkeepers and if they do not wish to employ an outside firm, they should at least get a man either from their own organization or outside, who is heavy enough to do a thorough job.

In an analysis of the problem of a particular plant

(Continued on page 965)

Use of the Butted Seam [1] by Textile Manufacturers

By John M. Washburn

Treasurer, Merrow Machine Co., Hartford, Conn.

IN THE PROCESSING of piece goods, it is usually desirable to join one or more "cuts" or pieces in endwise relation. Comparatively recently, the overedge stitch or seam has been adapted to this work, and because this seam, when opened out flat, by the tension of processing, permits the goods to assume end-to-end relation, at the seam, it has been termed the "butted seam." Either a one or two-thread type of overedge stitch may be employed for making these seams, and the appearance of each side of the two types of seams is shown in the accompanying illustrations.

Fig. *A* shows the covering or looper thread side of a seam of the two-thread type. The reverse or needle thread side of this seam is shown in Fig. *B*, and the goods are usually seamed so that these threads are showing on the face of the goods. Views of the two sides of the one-thread stitch are shown in Figs. *C* and *D* and the side shown in Fig. *C* corresponds to that shown in Fig. *A* of the two-thread type of stitch. It will be noticed that the appearance on one side of each seam, Figs. *B* and *D*, is identical.

In making the butted seam the two ends of piece goods are usually placed face to face, with their ends in approximate register, and fed through a machine which simultaneously feeds, stitches and cuts off any superfluous material. The stitching is applied loosely to the ends of the goods so that the tension of subsequent processing opens out the seam and the goods lie end to end with the overseam threads uniting the pieces, thus producing a flat seam, wherein the cut ends of the goods are confined within the seam.

Properties of the Seam.

A processing seam of this type has many inherent properties, among which are:

1. The seam is very little thicker than the goods, particularly when fine threads may be used or when the processing and fabric are such as to embed the thread into the goods.
2. The uniting threads lie in the direction of the warp threads of the goods, and if shrinkage of the seaming thread occurs, it does not reduce the width of the piece goods at the seam.
3. The formation of the stitch is such that the seam is elastic and may be stretched laterally with the goods without fear of breaking.
4. The seam will thoroughly dry with and in the same drying time as the goods.
5. The practical strength of the seam under longitudinal tension of the goods is dependent upon the retention of the filling threads by the warp threads of the goods, for a reasonable width of seam. Various widths of seams are available that will hold the great majority of goods through common processes.
6. The one-thread seam may be readily unraveled.
7. The width of the seam is comparatively small and little goods are wasted.

(1) By permission, certain parts of this paper being taken from a copyrighted article.

This is a brief abstract of a paper on this subject prepared for presentation, through the textile division, at the Hartford, Conn., meeting of the American Society of Mechanical Engineers, June 1-3. Published by courtesy of the Society and the author.

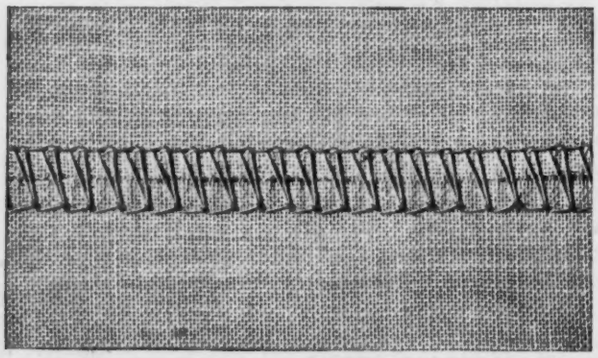


Fig. A.

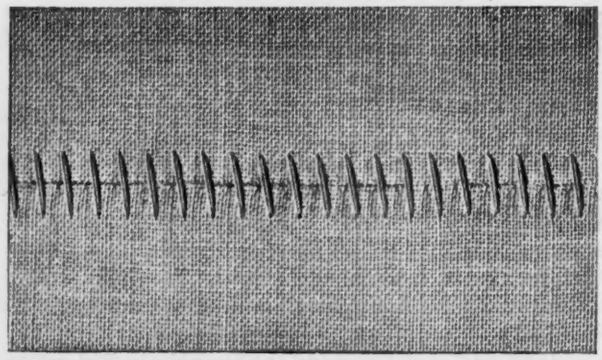


Fig. B.

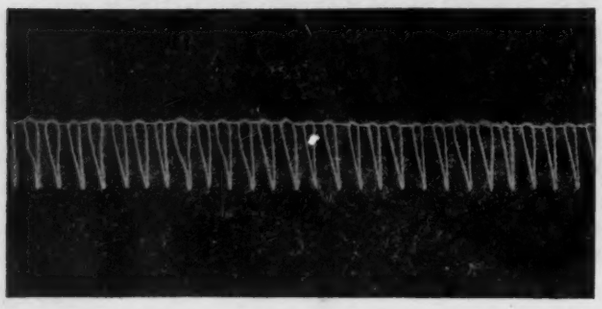


Fig. C.

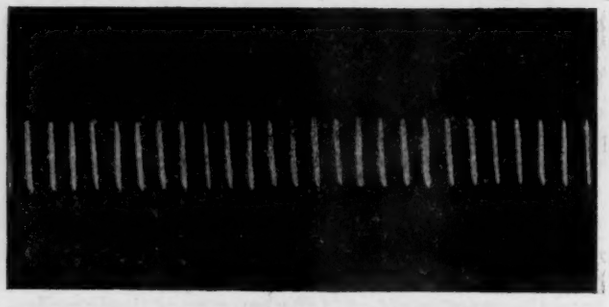


Fig. D.

Methods of Reducing "Seconds"

Article One.

THIS ARTICLE begins the publication of a short series of brief articles on how seconds should be prevented and eliminated and corrected. Each article has been written by a practical mill superintendent. While some of them may go over familiar ground, we think you will find in each some new idea of value—and, besides, as they all point out, it will do no harm for you to check over your own methods in accordance with what should be common practice and see if you are doing everything possible to fight this evil.—The Editor.

AGAIN and again the question is asked, "What causes seconds and how can they be remedied?" If any of us fellows could really answer this question and actually place in force the remedies, we could certainly go a long way toward keeping our plants far out of the red and over on the black side of the ledger. The truth is we will always have some off-qualities, but it is our responsibility to keep trying to eliminate them. If we will exert enough energy in the right direction, off-qualities will drop to a very low minimum, whereas on the other hand if we fail to use this energy then we can expect nothing but a high percentage of off-quality goods.

In making a study of off-qualities, I would class them in three main classes; the first class is oily and dirty cloth, the second is loom mechanical defects, and the third is preparatory mill troubles. It is true that there often exists overlapping of these three classes but I believe in analyzing cloth troubles these classes are to be considered.

Oil is a Major Cause.

In a normally well run mill on the average class of goods, I think oil to be one of the outstanding reasons, if not the largest cause, of all off-qualities. Oiling is one thing in a cotton mill that is poorly done. Oftentimes the oiler is one employee who is left to run his job his own way. He is told how many times to make his rounds, what kind of oil to use, and then whenever there is a little extra work to be done he is called upon to do it, with instructions to catch up with his oiling later. I have known of cases where the wrong oil was used for a week or more because the oiler got his oil barrels crossed up, he being a type of employee unable to tell the difference between a spindle oil and an engine oil. Go to your scrap iron box once in a while and see how many bearings have worn out because the oil hole has become plugged up. Watch your loom oiler go down an alley of looms and see just how many oil holes he shoots at and misses. Oil that is supposed to go into a bearing, and does not, goes somewhere else, and that "somewhere else" usually turns out to be either the cloth or the yarn.

Mechanical Defects.

Trouble from loom mechanical defects are many. Thread runs, or flats, caused by the stop motion being out of adjustment, bad let-offs, worn rocker shafts and boxes, poorly-adjusted filling change motions. All these and many more are causing seconds, shorts, and remnants every day. Some time ago, I was discussing loom fixing with a weave room overseer and he was telling me how he was taught to fix looms. I gathered from his remarks that he had been impressed by his overseer that the most important thing for a fixer to do was to keep his looms on the tight pulley. When a loom broke down, or a warp ran out, the quicker it was started, the higher the standing of the fixer in the mind of his foreman. Of course, production is a very essential item, but if we are going to make good cloth and a high percentage of firsts, then it would certainly pay all of us to instruct our fixers to use enough time to fix a loom right while they are doing it. The same thing is true in the warp change; if a fixer will take time to check over his loom and see that all adjustments are as they should be, then when the new warp is started the chances are better for a good running loom making good cloth.

Preparatory Mill Troubles.

When we turn to the third classification, that of preparatory mill troubles, we run into a field too wide to try to cover in a brief article. Of course, we should try to have as strong a yarn as possible and one with a fair amount of elasticity (sometimes I really think elasticity is more essential than straight strength). We all know that the weaker the warp yarn the more the warp breakage, and the more the warp breakage the more chances of trouble at the loom and in the cloth.

In warp yarn preparation, I want to stress the fact that proper care in slashing, drawing, and tying-in of warps all go a long way in keeping seconds down. I know of mills that think enough of drawing and tying-in to have in a separate department and under a separate overseer. I believe if you will question one of these mills that they will not hesitate in telling you that they consider such an arrangement a money-saver. Well cared for patterns will not only save in your supply bill of reeds and harnesses but it will make you good cloth month in and month out.

All I need to say about filling yarn is that the idea that anything will go in filling is just plain "boloney". Good filling is just as necessary as good warps. Of course, one yarn might necessitate a quality different from the other but the fact re-

(Continued on page 963)

Needs and Methods of Increasing the Use and Appeal of Cotton

By Cason J. Callaway,

President, American Cotton Manufacturers Ass'n.

Mr. Callaway.

MILL EXECUTIVES have learned to pay close attention to any statement made by Mr. Callaway, because he always gives good, sound advice and information. His statements in the accompanying discussion will include much that you already know, but he has put an interesting slant on a great deal of it. You should read it—and, more important, act on his suggestions. The accompanying remarks were delivered by Mr. Callaway recently in a talk before the Atlanta Rotary Club.

THE AVERAGE PRICE of cotton for the last ten years, 1921 to 1922—1930 to 1931 crop inclusive, taking the price of Middling spots cotton each day for these ten years and getting an average, is 19.31 cents per pound.

During these ten years, the American cotton farmer, you know, has not made enough profit to do much on his mortgage. It has taken all the money that he has received from this average price of cotton to allow him to buy his necessities, pay his taxes and have very little left for extravagances. This average price has not been sufficient to make life too easy or to allow him to do his share of American spending.

For this same period the average total supply of cotton per year has been 18,726,300 bales. The supply on hand for 1931 and 1932 will be 21,741,000 bales. This figure, of course, is an estimate, since we don't know the size of the new crop, but is arrived at by taking our 9,000,000 carryover and adding to this the amount of cotton we will raise this year, if we raise the same average per acre as we have for the last ten years. There will be a good deal of argument about the size of the crop, but taking everything into consideration, and since it is unknown, this seems to me to be the fairest guess. This 21,741,000-bale total supply for 1931-1932 is 3,014,700 bales greater than the average supply for the last ten years. America has consumed for the last ten years, an average of 6,006,600 bales; therefore, to get our statistical position correct, America will have to consume for the next twelve months, an additional 3,014,700 bales, or about fifty per cent more than America's average consumption.

Other Avenues Closed.

Our this year's crop is already planted. The production we can now do very little about. This crop is now selling for 8½ cents on the basis of the foregoing. Since the price of cotton is determined by supply and demand, this 3,000,000 extra bales of supply will cost the farmer on his 12,741,000 bale growth, $688,651,050. Since, as stated, the carryry over is with us, the new crop is already planted and we cannot hope to export larger than the average, due to world conditions, doesn't it look worthwhile to endeavor to remedy this by consuming an additional three million bales in America, or at least partly remedy it by consuming a part of this additional three million bales this year? Of course, it can be argued that even though we had the same statistical position as the last ten years, that cotton would not bring the average price of the last ten years, due to conditions; however, the conditions mean the prospective consumption of cotton, as far as cotton is concerned; nothing else.

Cotton is more generally used for more purposes than any other commodity known. For instance, there were 139 major classifications made last year by the Department of Commerce, using cotton products as a suggestion for gifts for Christmas. It is practical to use cotton in the place of a great many other commodities; it is practical to use an additional amount of cotton where it is already used, and it is practical to find new uses for cotton, where none has been used before. Take these and apply them properly over the thousands of items, and even 50 per cent increase does not look impossible.

Cotton Vastly Underrated.

The worst drawback to the increased distribution of cotton is the fact that the world has come to believe that cotton is a low grade article, and in my opinion, without reason. Cotton can be absolutely pre-shrunk, to the extent that it will shrink no more in washing. Cotton is moth-proof; that is, it is not attacked by moths. Cotton stands up better in the laundry than any other fiber. The Indanthrene dye which can be best used on cotton is the fastest dye in the world, and cotton can be printed or dyed absolutely sun-fast and tub-fast with this dye.

America uses a smaller per cent of their cotton

(Continued on page 931.)

Trends in Foreign Cotton Production; Effects on U. S. Textile Industry

Part One

By Robert Skliar

THE EFFECTS of an increasing production of cotton in other countries, and a simultaneous decrease in the consumption of American cotton by mills abroad, form a subject of definite interest to American manufacturers because of the influence upon the domestic and world cotton market.

In this short series, Mr. Skliar presents interestingly, and in an easily digested manner, the major facts in the situation. The present article gives the figures, and information as to what is being done to produce cotton in foreign countries. The next will discuss the characteristics of foreign-grown cotton . . . . . .

OWING TO THE SHARP DROP in consumption of American cotton on the one hand and to the increase in the use of foreign cotton on the other, the position of foreign cotton as a competitor to American was brought to the attention of the American world rather dramatically during the past season. The conditions during the 1929-30 season, however, were not average and the relative consumption of American and foreign varieties did not exactly represent the actual trend. In order to ascertain the true degree of competition which foreign varieties offer to American cotton we need to examine conditions for a series of years and the data for the past three decades will be sufficient for our purpose.

Consumption of Foreign Cotton Increasing.

If we examine the figures given in the table showing world cotton consumption we shall observe, among other things, that the total consumption of cotton increased steadily and is now about 8,300,000 bales or about 50 per cent greater than it was at the beginning of the century. The increase in the consumption of American is 3,800,000 bales or 35 per cent while the increase in the consumption of foreign cotton amounts to 4,500,000 bales or 82 per cent. This means naturally that the relative position of American is not quite the same as it was 25 or 30 years ago. This may be very clearly observed by referring to the graph showing the proportion of American and foreign cotton consumed.

WORLD COTTON CONSUMPTION

Five-year Averages	American Cotton 1,000 bales	% of 1901-1905	Foreign Cotton 1,000 bales	% of 1901-1905	All Cotton 1,000 bales	% of 1901-1905
1900-1901 to 1904-1905	10,900	...	5,470	...	16,370	...
1908-1909 to 1912-1913	13,025	120	7,125	130	20,150	123
1921-1922 to 1925-1926	12,605	116	8,975	164	21,580	132
1924-1925 to 1928-1929	14,720	135	9,980	182	24,700	151

It will be noted by the chart showing the proportion of American and foreign cotton consumed that while during the first five years of the present century the world depended upon our cotton belt to the extent of two-thirds of its cotton consumption, it depends now upon our southern states to the extent of only 60 per cent whereas the relative share of the foreign cotton increased from 33 to 40 per cent. If, therefore, we ask ourselves the question whether foreign cotton competes with American the answer must be in the affirmative. Had American cotton maintained in the recent five years the same relative position that it had in the years 1901 to 1905, the consumption would have been 16,300,000 bales instead of 14,720,000 bales, from which we are justified in making the conclusion that foreign cotton took the place of approximately 1,500,000 bales of American cotton.

No Increase in Consumption of American Cotton in Foreign Countries Since the World War.

It will be observed from Table I, showing the consumption of American cotton in the United States and in foreign countries that the consumption of cotton in the United States, which is practically all American, increased progressively so that the loss of the competitive position of American cotton took place altogether in the foreign countries. In these countries the proportion of American cotton consumed declined to 56 per cent from 64 per cent during the early 1900's. The interesting point to be observed from the table is that the consumption of American cotton in foreign countries during recent years was practically the same as during the immediate pre-war years. In other words, as far as foreign countries are concerned the progressive increase in the use of American cotton came to a standstill some seventeen years ago. That this was not due to lack of progress in the cotton manufacturing industries of these countries can be seen from Tables II, III, and IV, showing consumption of cotton in foreign countries, growth of cotton consumption in foreign countries, and pre-war and recent consumption of American and other cotton in principal foreign countries. These tables show among other things that the consumption of foreign countries of other than American cotton increased by about 2,750,000 bales, or 40 per cent since the pre-war period.

It appears from the figures given for the past three decades that if you take the status quo of the earlier years of the present century as a criterion, that there is a definite tendency for the consumption

PROPORTION OF AMERICAN AND FOREIGN COTTON CONSUMED TO TOTAL COTTON CONSUMPTION

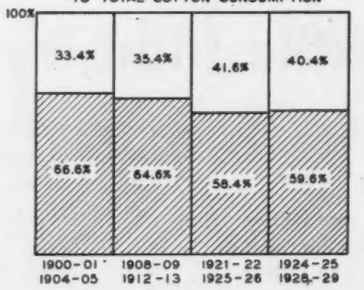


TABLE I

CONSUMPTION OF AMERICAN COTTON IN THE UNITED STATES AND IN FOREIGN COUNTRIES

FIVE-YEAR AVERAGES	UNITED STATES		FOREIGN COUNTRIES		TOTAL
	1,000 BALES	% OF TOTAL	1,000 BALES	% OF TOTAL	1,000 BALES
1900-01 TO 1904-05	3,940	36.1	6,960	63.9	10,900
1908-09 TO 1912-13	4,780	36.7	8,245	63.3	13,025
1921-22 TO 1925-26	5,875	46.6	6,730	53.4	12,605
1924-25 TO 1928-29	6,460	43.9	8,260	56.1	14,720

TABLE II

CONSUMPTION OF COTTON IN FOREIGN COUNTRIES

FIVE-YEAR AVERAGES	AMERICAN COTTON		OTHER THAN AMERICAN COTTON		ALL COTTON
	1,000 BALES	% OF TOTAL	1,000 BALES	% OF TOTAL	1,000 BALES
1900-01 TO 1904-05	6,960	56.6	5,335	43.4	12,295
1908-09 TO 1912-13	8,245	54.3	6,940	45.7	15,185
1921-22 TO 1925-26	6,730	43.7	8,665	56.3	15,395
1924-25 TO 1928-29	8,260	46.0	9,690	54.0	17,950

TABLE III

GROWTH OF COTTON CONSUMPTION IN FOREIGN COUNTRIES

(BASE: CONSUMPTION DURING 1900-01 TO 1904-05 EQUALS 100)

FIVE YEAR AVERAGES	AMERICAN COTTON	FOREIGN COTTON	ALL COTTON
1900-01 TO 1904-05	100.0	100.0	100.0
1908-09 TO 1912-13	118.5	130.1	123.5
1921-22 TO 1925-26	96.7	162.4	125.2
1924-25 TO 1928-29	118.8	181.6	146.0

TABLE IV

PRE-WAR AND RECENT CONSUMPTION OF AMERICAN AND OTHER COTTON IN FOREIGN COUNTRIES

	AMERICAN COTTON		FOREIGN COTTON	
	PRE-WAR(1)	PRESENT	PRE-WAR(1)	PRESENT
GREAT BRITAIN				
BALES	3,140,000	2,014,000	660,000	1,187,000
% OF TOTAL (2)	82.6	62.9	17.3	37.1
% OF PRE-WAR	--	64.1	--	179.8
CONTINENTAL EUROPE				
BALES	4,491,000	4,674,000	2,385,000	2,679,000
% OF TOTAL (2)	65.3	63.6	34.7	36.4
% OF PRE-WAR	--	104.1	--	112.3
INDIA				
BALES	53,000	86,000	1,265,000	1,698,000
% OF TOTAL (2)	4.0	4.8	98.0	95.2
% OF PRE-WAR	--	162.2	--	134.2
JAPAN				
BALES	298,000	1,032,000	889,000	1,620,000
% OF TOTAL (2)	25.1	38.9	74.9	61.1
% OF PRE-WAR	--	346.3	--	182.2
CHINA				
BALES	25,000	215,000	(3)	1,616,000
% OF TOTAL (2)	6.7	11.7	--	--
% OF PRE-WAR	--	860.0	--	--

(1) THREE-YEAR AVERAGE, 1910-11 TO 1912-13.

(2) PER CENT OF TOTAL CONSUMPTION IN EACH COUNTRY.

(3) FIGURES NOT AVAILABLE BUT CONSUMPTION BEFORE THE WAR MAY BE ESTIMATED AT ABOUT 1,300,000 BALES.

TABLE V

COTTON PRODUCTION IN PRINCIPAL FOREIGN COUNTRIES

OLD ESTABLISHED COTTON REGIONS (1)	FIVE YEAR AVERAGES 1,000 BALES			5 YEAR AVERAGE 1924-25 TO 1928-29	
	1900-01 TO 1904-05	1909-10 TO 1913-14	1924-25 TO 1928-29	% OF 1901-05	% OF 1909-13
EGYPT	1,300	1,450	1,530	118	106
INDIA	3,100	3,942	4,750	153	120
SOVIET UNION (RUSSIA)	440	950	830	189	(2) 87
PERSIA	65	135	90	138	67
TURKEY	50	135	100	200	74
BRAZIL	300	385	535	178	139
PERU	40	110	210	525	191
MEXICO	200	195	260	130	133
TOTAL	5,495	7,302	8,305	151	114
NEW COTTON REGIONS					
ARGENTINA AND PARAGUAY	(3)	3	82	--	2,700
BRITISH POSSESSIONS (EXCEPT INDIA)	5	45	300	--	667
OTHER COLONIAL POSSESS.	(3)	23	206	--	896
TOTAL	5	71	588	--	828
GRAND TOTAL	5,500	7,373	8,893	162	121
UNITED STATES	10,801	13,033	15,028	139	115

(1) REGIONS WHERE COTTON GROWING REACHED CONSIDERABLE PROPORTIONS IN 1900.

(2) THE LOW PERCENTAGE IS DUE TO LOW PRODUCTION IN 1924, 1925 AND 1926. DURING THE MORE RECENT YEARS THE PRODUCTION EXCEEDS THE PRE-WAR AVERAGE.

(3) LESS THAN 1,000.

of foreign varieties to increase much faster than the consumption of American cotton. It appears also that the increase in the other than American cotton took place mainly in Great Britain and in Asia, African and South American varieties having taken the place of American in the former and Asiatic varieties having replaced American in the latter.

The question one may ask is where this tendency may lead the cotton world and how it may affect American cotton? Before attempting to answer this question, however, we must get acquainted with the foreign cotton varieties, their location, their qualities as well as the factors involved in their increased production.

Production of Foreign Cotton.

Dividing the foreign cotton-producing countries into old established cotton-growing countries (that is, countries where cotton growing reached considerable proportions by 1900) and relatively new cotton producing countries, as is done in Table V, it may be noted that production in the former group in-

creased by 2,800,000 bales or 51 per cent as compared with the early years following 1900 and by 1,000,000 bales or 14 per cent as compared with the pre-war period. One important country belonging to this group—China, had to be left out because of lack of reliable comparative data. From such figures as are available it appears that the production is now about 200,000 bales greater than before the war. In the second group we see that, although there was a considerable increase in some independent nations such as Argentina and Paraguay, the bulk of the augmented cotton production comes mainly from the colonial possessions, particularly those of Great Britain where the production increased from a negligible quantity in 1900 to about 300,000 bales in recent years.

Promotion of Cotton-Growing Agencies and Methods.

Cotton production, therefore, has increased in practically all foreign countries and new fields were developed during the past three decades. It is interesting therefore to inquire into the main factors which contributed to this phenomenon. First of all, we must consider the general tendency everywhere to exploit the soil, to find further employment and additional sources of wealth on the part of the population. Then, we may consider the increased local and export demand for cotton in the various countries and finally we come to the factor which interests us most, that is, systematic efforts made by the cotton-consuming and cotton-producing countries to expand production of this fiber. These efforts left their experimental stage long ago and represent now a very important stimulus to increasing cotton growing. For this reason, a brief review of the principal regions where cotton growing is being developed, the principal agencies promoting cotton growing, and the results so far obtained will not be out of place.

Because of the importance of the cotton manufacturing industry in Great Britain it is only natural that the foremost cotton promoting organizations should be British. There are two such organizations —the British Cotton Growing Association and the Empire Cotton Growing Corporation. The central purpose of both organizations is to promote cotton growing in the various parts of the Empire but the functions of the British Cotton Growing Association are more specific, such as establishing and maintaining of ginneries, distribution of cotton seed to local growers, establishing of model farms and purchase of the crop from the natives, while the functions of the Empire Cotton Growing Corporation may be said to be more or less general in encouragement of cotton growing, such as surveys of cotton growing possibilities and establishment and maintenance of research facilities.

The financial resources of these organizations are considerable. The principal source of revenue of the Empire Cotton Growing Corporation is the cotton levy, legally established in Great Britain, under which a tax is paid by the spinners on each cotton bale consumed in Great Britain. From 1923 to 1928 this levy was at the rate of about 12 cents per bale but in the latter year it was reduced to about six cents. Inasmuch as Great Britain consumes around 3,000,000 bales annually, a substantial amount is derived from this source. Another important source of revenue is income from investments. The principal sources of income of the British Cotton Growing Association are interest on bank balances, on advances to growers, etc., and dividends and interest from investments and profits from the sale of raw cotton.

In addition to these British organizations there are local cotton promoting agencies in the far-flung parts of the Empire. Thus in India there is the Indian Central Cotton Committee formed for the purpose of encouraging improvement of production and marketing methods as well as of improvement of the quality of Indian cotton. This organization is supported mainly by a levy on cotton consumed in India, as well as that which is exported. This levy was at the rate of about eight cents per Indian bale from 1923 to 1926 and at the rate of about four cents per bale from 1926 on. Since India consumes and exports nearly 6,000,000 bales this committee commands a substantial income. It may also be noted here that the Indian government contributes indirectly to the promotion of cotton growing by financing the construction of irrigation works and by various legislative acts passed for the purpose of improving production and marketing of cotton.

The Australian Cotton Association constructs and maintains ginneries, furnishes free seed to cotton growers and acts as agent for the government of Queensland or for the federal government in ginning and marketing the crop during the terms of guaranteed prices. The department of agriculture of the Union of South Africa is doing considerable research work as a result of which a jassid-resisting variety is reported to have been developed; the department also maintains classers to grade cotton for export. The local governments of the various other colonies in Africa and other parts of the world likewise stimulate cotton growing to a greater or less extent directly or indirectly.

A word may also be said about private cotton-growing companies, the most important of which is probably the Sudan Plantations Syndicate operating in the Anglo-Egyptian Sudan where it is managing practically the whole cotton-growing enterprise, sharing the proceeds of the crop with the growers and the local government. It may be noted in passing that since the opening of the Sennar (or Makwar) dam in 1925 more than 300,000 acres were opened for cultivation in the Sudan. A similar company—the Kassala Cotton Company—was also granted a concession in the Sudan and another British company is reported to have been granted a concession by the Iraq government, involving some 60,000 acres but so far the operations of the latter company were limited. Another British company should be mentioned, namely, the Brazilian Plantations Syndicate, Ltd., formed in Great Britain for the growing of cotton (and other crops in Brazil).

The French Colonial Cotton Association has for its purpose the development of cotton growing in the

French colonies and the encouragement of the use of colonial cotton by the French spinners. The principal source of revenue of this association is a levy of one franc per bale paid by French spinners on 80 per cent of their active spindles. This income, however, was considered inadequate and in 1927 an import duty of one franc per 100 kilograms was imposed on raw cotton imported into France which is to be collected until April, 1937, the proceeds of this duty going toward subsidizing cotton growing in the French possessions.

Although the development of cotton growing in the Italian and Portuguese colonies in Africa is promoted by the respective governments no great progress has been made so far but some progress has been made in the Belgian Congo where cotton growing is promoted by the Belgian government as well as by private companies.

Japan, likewise, is making efforts to promote cotton growing, mainly in Chosen, but also in southern Manchuria, an association having been formed for the purpose of promoting cotton growing in the latter area. Japan also interested itself in cotton growing in South America, which work was entrusted to the South American Colonization Company, established by a large spinning concern in cooperation with other Japanese houses. This company received a concession from one of the Brazilian states, placing under its control about 2,500,000 acres to be assigned to Japanese colonists. A few thousand acres were also reported to have been leased in Peru by Japanese interests. It is said that the Japanese government contributes a portion of the traveling expenses to the emigrating colonists.

In China the main attention is directed toward introduction of improved native and of American varieties, a few of the latter having been acclimatized since 1920. In order to do away with certain malpractices, a cotton testing department was established with branches in Shanghai, Tientsin and Hankow where all cotton destined for export is inspected for excessive moisture and other forms of adulteration. Incidentally, the cotton testing department also conducts educational and research work.

Soviet Cotton Growing Plans.

One phase of foreign cotton growing of great interest at present is the activity of the Soviet Union through its Chief Cotton Committee and other organizaions. Before the war, the average annual production of cotton in Russia amounted to about 900,000 bales and in 1915 the production reached 1,500,000 bales. During the revolution the irrigation system in Turkestan all but broke down, also, natives planted food crops instead of cotton. As a consequence, cotton growing almost ceased. In 1921 only about 43,000 bales are estimated to have been produced, and in 1922, only 55,000 bales. Since those years, however, production increased steadily reaching about 1,300,000 bales in 1929 picked from about 2,600,000 acres. The estimated average for 1930 is 3,840,000 and the estimated production about 1,850,000 bales while the Soviet program for 1931 calls for nearly 6,000,000 acres or an increase of 50 per cent.

Production of cotton growing in the Soviet Union is followed along four main lines: introduction of large scale farming by gathering the individual growers into large collectives; introduction of tractors and farm machinery; increasing the available supply of fertilizers; and introduction of cotton growing in the southern part of European Russia. It is claimed by Soviet authorities that the Turkestan-Siberian railroad recently completed will make available the grain supplies of Siberia to Turkestan which will permit the latter region to devote a larger acreage to cotton.

For the first time Russia entered the cotton export market in 1930, having put into Liverpool and Manchester more than 150,000 bales of cotton which is reported to have been classed by some Liverpool brokers as being "bread and butter Texas" but of "Memphis character". A few thousand bales were shipped to Bremen and small shipments were sent to Italy and Poland while Bombay received a small quantity of Soviet cotton from Liverpool.

The Russian Cotton "Bear".

The Russian "bear", therefore, appears to be emerging from a figure of speech into a reality, especially insofar as its effects upon American growth is concerned, in view of the fact that, under present conditions, users of cotton in England and elsewhere evidently disregard any sentimental attachment for American growth, which may or may not have prevailed, when cotton or more or less similar grade or staple may be secured from another source, possibly, at a lower price.

In appraising the export possibilities of the Soviet Union, however, we must take into consideration its potential home requirements as well as its production. At the present time the quantities of cotton exported from that country do not represent a surplus in the strict sense of the word, for the supply of cotton goods is admittedly short and the output of the cotton manufacturing industry is not only greatly below the current needs but materially below the program. The per capita consumption of cotton in the Soviet Union during the few recent years was under ten bales per thousand of population and for the past two years it was about eleven bales. This is about 60 per cent below the per capita consumption of Continental Europe, except Soviet Russia, and it is evident that the domestic requirements of the Soviet Union will grow if any increase in the standard of living takes place. Should, for example, that standard approach the level of that of Continental Europe such requirements would increase to something like three million bales, or, roughly, about one and a quarter million bales over its present consumption.

The Brazilian government is making efforts to bring about better farm practices and improve the cotton varieties, these functions being entrusted to the Federal Cotton Service and to the cotton services of the various state governments which maintain experimental stations and distribute cotton seed for planting. Some of them maintain cotton classing staffs.

(Continued on page 961.)

UPS AND DOWNS WITH THE COUNT

Eighth of a Series of Articles on Textile Designing

IN this, the eighth article in the series, the author shows and describes a typical construction sheet, based on the style described in Article VII.

IF YOU REMEMBER the opening article of this series you will recall that we told you that a designer must give comprehensive instructions to the various overseers and other individuals in the mill regarding their respective responsibilities in the manufacture of all fabrics. Well, boys and girls, we have designed S/Princess—Quality 300 and now we must issue orders, details, and particulars concerning the manufacture of it.

The form which we show here is used by an outstanding southern mill and is kept in the designer's file in a section devoted to this fabric. In this section are the following: the drawing-in draft, the chain plan, the construction sheet (shown here), and a piece of cloth ¼ to ½-yard long. If anything unusual develops concerning it, notes are added. Please let us make a suggestion here: if a construction is changed, don't try to correct all of the orders which have been already issued. Somebody will have a copy he has made himself, and you will never find it; but six months later he will produce it to defend his position in some mistake which he has made. If you make corrections, give the corrected instructions a new title and refer to the fabric by that designation. If you had to change the picks of this fabric to 54 because the cloth was too flimsy, call the new fabric S/Blonde Princess or something like that and *keep all of the records of both constructions.* The writer bears scars in proof of the advisability of this act. Suppose the president should ask you a year later, "Why did we increase the picks in this cloth?" You tell him that he said the first cloth was too flimsy, and he says that he doesn't remember the case and asks you to produce a sample of the original cloth. What does that make you and me?

We would like to sit down and talk this thing over with you boys personally, but there's a great scarcity of really good beer. Since your mill is so much different from ours, we will not attempt to say what parts of this form should be given to each man concerned. We will content ourselves by taking up the items separately and explaining their peculiar significance in the mill under discussion. Don't forget this: the form will not fit your mill *exactly*—there will be some dope that your mill doesn't need and there will be omitted some dope that your mill will have to furnish. We are sure that the typical form will help you, however.

First of all, this particular form is printed on the same stock of paper as United States postal cards. This makes it strong and at the same time flexible enough to insert the information on the typewriter. Here we go, item by item, on the face of the card—See Fig. 1:

At the top of the form is the name of the mill in case the form should be sent to a customer or to the commission merchants. Under this is the style designation, either number or name. Next is the warp description. In this case it is simple 25s dyed with direct color. Then we come to the filling; 150 denier "A" quality rayon bleached. As a matter of fact, the manufacturer of the rayon is also listed, but we have left that blank.

Now we come to *ground* and *overall* construction. In this case they are the same. But if we had a satin stripe or bunched picks, or an overall figure, the dope would not be the same. We don't go further into this discussion for this reason: if you are making that type of fabric you already understand what we mean. If you are not, you will not be interested. These figures pertain especially to the cost and production department anyway.

Now we come to *finished width.* In this mill they finish their own goods. If you make grey goods, the grey width would be the figure. In this particular case the grey and finished widths are the same. Not so with bleached goods and the like.

The *spread in reed* is for the sake of the boss of drawing-in. If it doesn't check, he knows that there is a mistake either in the reed or in the way the hand has drawn the warp in. The loom-fixer should also check this figure before he puts the warp in the loom. In the case of mills who have special men to warp looms, it is their province to check this.

In the case of cotton warps and rayon filling, the *yards per pound* is not significant to the cost department. It enables the packing and shipping department to see if they are handling the proper style of goods. It also gives the cloth room an additional opportunity to check the construction. The figure will

BLANK COTTON MILLS

Princess

Quality 300

1/25 Direct Blue WARP FILLING 150 "A" blea. Rayon

58 x 50 GROUND OVERALL 58 x 50

32 INS. FINISHED SPREAD IN REED 34.4

6.25 YDS. PER LB. PER CENT OF CONTRACTION 10

TYPE OF LOOM C. & K. 25 Harness. Reed No. 37

50 PICK GEAR NO. BEAMS REQUIRED 1

46 HARNESS BARS BARS IN BOX CHAIN -

- LINKS IN MULTIPLIER NO. HARNESS 18

PRODUCTION 75% 6 LOOMS TO WEAVER

WARPING ORDERS:

TOTAL ENDS IN WARP 1912

5 BALLS ~~BEAMS~~ @ 319 ENDS OF 1/25

1 BALLS ~~BEAMS~~ @ 317 ENDS OF 1/25

BALLS BEAMS @ ENDS OF

BALLS BEAMS @ ENDS OF

BALLS BEAMS @ ENDS OF

BOTTOM BEAM 1912 TOP BEAM - EXTRA -

LAYOUT

1/25 Direct Blue

SAMPLE SHIPPED 192

FIG. 1

HARNESS BUILD

1	165 (160)	6	100	11	100	16	100
2	165	7	100	12	100	17	100
3	100 (96)	8	100	13	100	18	100
4	100	9	100	14	100	19	
5	100	10	100	15	100	20	

FILLING ARRANGEMENT

150 den. "A" Bleached Rayon.

NOTES

DESIGNER COLLINS.

FIG. 2

always vary a little, but if the variation is very much, an investigation is instituted which usually reveals that the cloth was either improperly made or improperly styled.

When we come to *per cent of contraction*, we give the figure which will enable us to know how many yards of warp yarn it will be necessary to order to get a given number of yards for woven fabric. This is usually a little higher than the actual in order to take care of unexpected waste, etc.

The *type of loom* is obvious. You may distinguish your different looms any way that you want to. The reed number was explained in Article VII of this series, published in June, 1931, COTTON.

The *pick gear* is introduced because some fabrics slip so much on the sand roll that a gear different in number from the actual number of picks must be used. Also, when the pickage is very high, it is customary to change the pinion gear so that the pick gear puts in two picks for every tooth. The writer knows one pretty mill which always screws its customers to the extent of one pick. That is to say, for this fabric it would use a 49 gear. That's their business.

The item about the *number of beams* required is for the cost department. Of course it costs more if you have to make one or two top warps. In this case there is only the ground warp.

Now we come to *harness bars*. If you look at the chain plan (see page 748, June issue), you will see that this design repeats on 92 picks. But the figure for the bars says 46. Why? Because all of the looms in this particular mill are double index dobbies. We haven't time to go into the question except for this: a single index dobby requires one bar for each pick, while a double index dobby has two picks of filling pegged on the same bar.

The items concerning bars in box chain and links in multiplier refer to a fabric which employs two or more kinds of filling. At this time it may be a good idea to profit by the plan which our Army has of making a man fill in every space whether significant or not. If it is nothing, the filler-in merely checks the space. But this proves that he has not overlooked the possibility of an entry.

You will understand the *number of harness* required by looking at the drawing-in draft or chain plan.

The *percentage of production* is changed from time to time as experience shows us what we may logically expect. We have to estimate the first figure which we use unless we have made fabrics quite similar to the new one. In the event that we find our figure wrong we do not *erase* it, but *strike through* it in order that we may have a complete record of the changes in their consecutive order.

The item of *looms per weaver* is easily understood. It is also of importance to the cost department in figuring weaver's piece work pay.

Under *Warping Orders* you will find that we call for either balls or beams. This particular mill has three systems of dyeing, viz., raw stock, long chain, and beam. The designer must know what type of dyeing will be employed. In this instance, he knows that the warp will be dyed in the chain, so he orders 5 ball warps with 319 ends each and one ball warp with 317 ends, which gives him his total of 1,912 ends. If the

warp were either raw stock or beam dyed he would have ordered warper beams.

Under the head of *lay-out* the designer would specify for the slasher or dressing room just how any stripes would be arranged. In this case, the warp is all solid color, so he shows this by the one entry.

The entry concerning *sample shipped* is filled in to show when the customer was sent a sample in case either the customer or the commission house had designated a "dead line" for the receipt of a sample for approval.

In the case of entering an order for any new fabric it is customary to base it "contingent on approval of sample to be submitted by mill."

Now we turn the form over (See Fig. 2)—the information under the first entry is to tell the harness builder how many heddles to put on each of the harness shafts. This is found from the drawing-in draft. You count the number of ends drawn on each harness shaft and multiply this number by the number of repeats, adding any extra ends and the selvages on their respective shafts. It is customary to allow a few extra heddles on each shaft. The numbers given show the number of heddles required, with a small extra allowance. This allowance is made in order to be sure that the builder gets enough heddles on each shaft. It is customary for him to *measure* the heddles and not actually count them. His experience will teach him that certain types of heddles will run a definite number to the inch. As a matter of fact, the first and second shafts actually require 160 heddles each and the rest of the shafts 96 heddles each. Usually even more extra heddles are allowed, since their presence does not hurt anything.

Under the head of *Filling Arrangement* we would have a description of what order the different picks of filling should occur in provided we had more than one system of filling. In this instance, all the filling is the same, and we enter it as such; just as we showed only one system of warp under *Warp Lay-out.*

Filling Arrangement is for the benefit of the box-chain builder and the cost department. It is sometimes desirable to list just what number of picks of different kinds of filling we have. This information and any miscellaneous matter is entered under the head of *Notes.*

Many mills have more than one designer. That means a chief designer and his assistant or assistants. In such a condition it is desirable to know which of them is responsible for the fabric, because every time a designer makes a really bad error someone has to go back to sweeping or oiling. We signed this "Collins" because that is the only name we know of that has never belonged to a designer.

We close this article with our oft-repeated desire to help you in any of your peculiar problems.

(The ninth and concluding article in this series on textile designing will appear in an early issue. It will cover common designing problems in a general manner. —The Editor.)

Increasing Uses of Cotton.

(Continued from page 924.)

crop than any other agricultural product of any appreciable size. For the last ten years, the average per cent of the total growth of the following agricultural products consumed in America, was as follows:

Wheat, 74.10 per cent; corn, 98.26 per cent; oats, 98.11 per cent; wool, 99.55 per cent; cotton, 45.07 per cent.

This will show that America uses a smaller amount of their growth of cotton than any other agricultural product. We cannot expect the world to appreciate cotton unless it is enthusiastically backed by the section of the world that grows the greatest part of it. If you go to Brazil, you will find that the people there are proud of their coffee and consume a tremendous amount of it per capita. The same thing is true of perfume and wine in France; in Germany of beer; in India of jute; in Japan of silk and tea; in China of rice and tea and in Australia of wool. "He who crieth not his wares in the street, taketh them home," and if America, and especially the south does not make an effort, and a substantial effort, toward the increased use of cotton, by seeing that the people in our own country and the people of the world know the advantages of cotton, how can we expect other sections and other countries to take up this duty?

The cotton growers and cotton manufacturers have done less in the last ten years toward advertising and merchandising their product, than the growers and manufacturers of any other raw material of proportionate size in the world.

The average of the textile mills in America have lost money on an average for the last ten years. This is a condition which is serious, and which would also be relieved by the increased use of cotton goods. The individual with no direct or indirect in cotton would be benefitted, since this fiber is found to be economical and practical for new purposes, every time that any attention is given to the subject.

Why cotton is given a bad name, which it does not deserve, instead of a good name, which it deserves, I can give no reason, except that it is an economical fiber. You see articles advertised guaranteed all wool; guaranteed all leather; guaranteed pure silk or sterling silver. I would like to see some advertisements guaranteeing 100 per cent cotton. I would like to see the cotton manufacturers take such pride in their product that this label would be a commendable one. I would like to see the cotton growers take such pride in their product that they would insist on 100 per cent cotton wherever possible. I would like to see the people of America take such pride in their world position on the growth of cotton, and in the merit of this great fiber, that they would enjoy knowing that many articles that administer to their comfort and happiness are made of cotton, or partly of cotton. I would like to see cotton come into its own, and take the place in our daily lives, in our comfort and in our pleasure that so so richly deserves.

CURRENT TOPICS

Talk of the Month.

The Outlook for Business.

SO FAR this year has been one of successive disappointments over general national and international affairs, economically, as affecting the textile industry. Fortunately, however, nature has been at work, with a slow but sure healing process, and the old-line industries appear to be restoring their vitality quicker than others.

The month of July was very remarkable because of several occurrences which gave confidence to business. Whether this confidence is permanent is being seriously watched. The acreage of cotton and the crop condition report, together with the various weather forecasts, accentuated by the lessened use of fertilizer, have created a better feeling in that the general trade has felt that the crop will not be more, at any rate, than has been anticipated.

The final outcome of the debt moratorium is still a question, but it served basically to arouse business from a condition of despondency into one of activity and hope. Economists report that while the present deficit in the United States treasury of nine hundred million dollars will be increased by two hundred and fifty million by the moratorium, this can be handled well without any serious distress to American business and even without increasing the national tax burden.

Strengthening of credits in South America is being considered by the Federal Reserve Bank and the Bank of International Settlements. Australia has been granted a moratorium of debts and possibilities of increased credit there lie in this effort. International economic responsibility seems to be finally functioning. The Orient and its silver, and in China additional civil insurrections, and political disturbances and embargoes in India, are still problems for the world. However, with movements such as have been taking place, there is hope that the eastern area will not be overlooked.

This brief world sweep is encouraging because nations are so closely knitted together that improvements must be looked for in wide areas. Particularly because of the world-wide scope of the textile industry, textile manufacturers must realize the importance to them of international economic conditions. They must also realize that this industry cannot be cured independently of other businesses; that the general depression is an inter-related one, and the whole condition must be overcome before any individual industry is going to emerge upon a wholesome and confidence-inspiring basis.

The fact that foreign countries may have their financial credit strengthened and their international confidence increased, indicates a possibility for greater foreign trade. That means there may come a greater demand for American raw commodities, especially cotton, and for American manufactured textile products, either or both of which will mean a stimulation to the industry.

Another fact that has given confidence to the textile industry during recent weeks is that cotton reached its low point and textile products seemed to have reached their low point in price. Subsequently there have been reactions both in the raw cotton market and in the commodities markets. Cotton has reacted almost ten dollars a bale from the low point, and fluctuated around that point until recent conditions have made it much lower. However, these quotations seem to be influenced by temporary economic instability rather than supply and demand. When this fright has passed, cotton will likely regain this loss. Yarns and textile commodities have advanced noticeably, but not as rapidly as the cotton market. Stocks of manufactured products have been reduced, and the sensible attitude by large groups of manufacturers in keeping production in line with demand is also a hopeful sign.

The cotton stabilization policy of the Federal Farm Board has not been definitely announced at this writing, but the education which the members have received from the trade press, plus their natural orientation, which came from their experience in endeavoring to apply the policies of the act, plus their own business acumen, have caused the grower, the shipper and the manufacturer to believe that the Board will do nothing rash or radical in disposing of its holdings, or assume any more responsibility by enlarging their potential hazard in extending their holdings or creating any further extraordinary artificial or economic position. The Board still operates at times under the shadow of political pressure, and this is calculated to cause it to disregard somewhat fundamental economics occasionally.

All of these indications lend hope to the future, but also give warning signs that during these reconstruction days anything can happen, and the most hopeful signs can be counter-acted with but little trouble because of the timidity and lack of business confidence that exists generally today.

Obsolescence in Over-Capacity

IN A RECENT statement, George H. Houston, president of the Baldwin Locomotive Works, said that there is no question but what we have to modernize American industry. The thing we need to be very careful about is not to over-build our industry, "but to discard the obsolete as we create the new." It is felt by many that obsolescence is a larger issue than over-capacity in the textile industry, for much surplus in this country and abroad is based on the continued operation of antiquated machinery. Accordingly, the remarks of B. B. Gossett, reported in last month's issue, on the fact that New England has discarded so much machinery, and that the South

must follow suit, cannot be over-emphasized. Mr. Gossett sounded a danger signal in his prediction that the cotton-textile industry needs to lose 2,000,000 spindles more to assist in adequate re-adjustment, and in his opinion that New England had lost its part, 5,000,000 spindles. The remaining 2,000,000 spindles could and would likely be taken out of the South. The South needs to get out of its seat of self-complacency and smugness of position. There are some adjustments that must be made, and they must be permanent. The South is slipping until it makes them permanent.

Sloan's Word of Warning.

EARLY IN JULY, Mr. Sloan of the Cotton-Textile Institute, issued a double warning which bears repetition because of its application to the fall, and to the other divisions of the industry as well. The then favorable indications he found "due in no small measure to the determined manner in which mills have restrained themselves to the extent of keeping production within the bounds of demand." However, he said, there is one grave danger in the situation, "which could speedily destroy all confidence and stability, and it is important that mill executives should avoid policies which may make this danger a reality. If mill managements should allow their present enthusiasm to influence them again to overproduce, the gains which have already been achieved would be promptly nullified."

At about the same time, Mr. Sloan cited an analysis of authoritative data collected by Mr. Munroe, manager of the Institute's cost section, to demonstrate the disadvantages of double shift operation, from which he drew the astonishing, but sound conclusion that, "we now see a price situation where the carded yarn manufacturer who persists in day-and-night operation is losing, and will continue to lose, more money than his day running competitor."

The Situation as to Curtailment.

THIS LEADS logically into a needed emphasis upon curtailment, which is still the order in the textile industry. Too many mills have failed to realize that the 55-50 program, in the cotton-textile group, is a necessity in present-day adjustment. This program was announced not as a temporary expediency, but as a permanent policy after long and careful study.

Textile mills must finally decide as individuals upon a policy of operations in keeping with conditions. The desire on the part of mills to reduce overhead and manufacturing costs by full-time production has been proven a fallacy time and time again. The manufacturers blame the farmers for big cotton crops and call them ignorant, poor planners, and then do even worse than the farmers, because the farmer cannot vary production once it is started, while the manufacturer always has a lever of control and statistics to show him how to do it, and a market urging him.

If the operations of the mills were planned on at least a yearly basis, upon budgeting output and control, upon some of the modern methods which many fundamental establishments have incorporated in their plans, the cry of curtailment might not be so imperative and so frequent.

As to the current situation, this is naturally the dull season through which the industry passes, and normally there is much curtailment. The recent spurt in print cloth sales has rather reduced in percentage the amount that should wisely be in force. The running of these mills on such a short curtailment schedule had had a bad influence on other types of mills that need to curtail much heavier.

The sheeting mills are curtailing approximately 40 per cent and will likely carry this program on until fall. Cotton duck production seems to proceed on about a 50 per cent schedule. Curtailment in the yarn mills runs between 30 and 40 per cent, and looks as if it will continue into August and perhaps longer. It is estimated that 80 per cent of the mills of the South are engaged in some form of curtailment, whereby they hope to keep production in line with demand and enter the season after Labor Day with an inventory that invites confidence.

The textile industry is gradually learning to curtail when stocks get out of line, or when a lethargy arises in the market. Production control is an enigma that baffles most mills at present. The irregularity with which the mills are effecting their curtailment policies is such that the average observer would not get a correct estimate of the amount. Different conditions in different mills make this condition necessary. Some mills operate alternate weeks, some short weeks, some curtail machinery, some are busy now with demand orders that will later do their part.

The Follow-Up of National Cotton Week.

CASON J. CALLAWAY, president of the American Cotton Manufacturers Association, remarked recently that there are only two ways of relieving the cotton-textile situation insofar as the present year is concerned. The first way is to destroy a bale of cotton, or, as he says, "rub out a bale"; the other way is to use up a bale, and by this he means for the ultimate consumer to use up the bale.

It is practically impossible now to "rub out" any of the crop, as it is planted. So the logical thing to do is to endeavor to have ultimate consumers use up more bales.

Following the outstanding success of National Cotton Week, President Callaway released suggestions calling attention to extended uses of cotton. The results of the nation-wide sales promotional program are still being appraised in high percentages in style goods and wearing apparel and home furnishing, and the energy let loose will likely conitnue through the summer and late fall.

Among other uses to be developed, as suggested by Mr. Callaway, is that of uniforms for workmen, and savings both to employer and employee, resulting from clean, sanitary work clothing, are being cited. The idea of clean work clothes and uniforms is gaining favor rapidly in many industries. The extension of this plan would be beneficial to all, and this extended use would consume much of the heavi-

er woven fabrics.

Another suggestion emphasizes the value of cotton bagging for cotton bales, and proposes that mills pay for seven pounds of additional cotton at whatever price they purchase their cotton on any day, provided the cotton is wrapped in 100 per cent cotton bagging. Hundreds of mills and ginners and farmers throughout the country have endorsed this program, and unquestionably a large percentage of this year's crop will be wrapped in cotton. It is estimated that if the cotton of the South could be wrapped in 100 per cent cotton bagging, this increased use would consume about 165,000 bales of the surplus.

As pointed out last month, the starch manufacturers have agreed to ship starch to mills in cotton bags at the same price as other kinds of bags. There are hundreds of other potential uses of cotton that can be extended. Since for the current year the only way out is to "use it up", it is incumbent upon all mills, growers and others interested, to study and apply the principles of increased use for the year 1931-1932.

Meetings of Carolina Textile Associations.

THE COTTON MANUFACTURERS ASSOCIATION of South Carolina held its annual meeting at the Grove Park Inn, Asheville, N. C., on June 27th. T. M. Marchant retired as president after three years of service, and W. S. Nicholson, president of the Union-Buffalo Mills Co., was elected to succeed him. Marshall Beattie and Marshall Orr were made vice-presidents; and W. P. Jacobs, of Clinton, S. C., was elected secretary under a resolution adopted to create a full-time secretary's position with increased activity.

The annual meeting of the Cotton Manufacturers Association of North Carolina was held at Sedgefield Inn, near Greensboro, N. C., on June 19th and 20th. K. P. Lewis, secretary-treasurer, Erwin Cotton Mills Co., West Durham, N. C., was made president of the Association, succeeding W. D. Briggs, of Raleigh. Three vice-presidents were elected: Charles A. Cannon, Kannapolis, A. M. Fairley, of Laurinburg, and L. W. Clark, of Spray. Hunter Marshall, Jr., of Charlotte, was re-elected secretary-treasurer.

Advertising Mills Show Improvement.

SEVERAL WEEKS AGO, President Sloan of the Institute distributed an interesting commentary on the relatively greater improvement experienced during the first five months of 1931 by fine cotton goods and print cloth yarn fabrics, as compared with all other cotton gray goods. Sales of the former for the period were 14 per cent greater than for the same period last year and only 7 per cent less than during the five-month period of peak activity in 1929; while sales of all other cotton gray goods during the period were 13 per cent less than for the same period in 1930. This "noteworthy partiality" toward fabrics which have been co-operatively advertised was explained by Mr. Sloan to be due to the concerted advertising campaign on these fabrics, improvement in styling, and the growing fashion importance of cotton.

What the Southern Mills are Doing

WEST BOYLSTON MFG. CO., Montgomery, Ala., recently announced that they had received bids for the construction of a new building. Robert & Co., Inc., Bona Allen Bldg., Atlanta, Ga., are the engineers.

Contract has been let to Huntington and Guerry, Inc., of Greenville, S. C., for the installation of all electric wiring, motors, etc., in the new Clark Thread Co. mill at Austell, Ga. The construction of 60 cottages for employees is being carried on by Fiske-Carter Construction Co., Greenville, S. C.

Charles Bond Co., of Philadelphia, recently received an order from Southern Brighton Mills for loom strapping for 674 Draper Model X high speed looms to be installed shortly. It is reported that 150 sets of strapping will be furnished each month until the order is completed.

The Southern Silk Mills, Greensboro, N. C., have been operating on a full day-and-night schedule since last August and it is reported are well sold ahead. The installation of new winding machinery and modern sizing equipment now enables the mill to manufacture all types of popular rayon crepes, as well as all types of pure thread silk fabrics.

Contract for the painting of 542 houses in the Lancaster Cotton Mills' village, Lancaster, S. C., has been awarded to Fred Herndon of Lexington, N. C.

A one-story brick building, costing approximately $2,500, has been constructed by the Standard-Coosa-Thatcher Co., Chattanooga, Tenn., and will be used as a cotton classing room with an office for cotton buying.

It has been reported that work is being pushed on the new mill unit of the Tennessee-Eastman Corp., Kingsport, Tenn., for the production of acetate yarns and it is hoped to have the plant ready for regular production in October. It represents an investment of $1,000,000 for machinery.

The Pomona Mills, Inc., Greensboro, N. C., recently purchased a Hermas automatic shearing machine, with vertical brusher, through the Carolina Specialty Co., Charlotte, N. C. A wide vacuum extractor, manufactured by the Philadelphia Drying Machinery Co. was purchased by the Neisler Mills, Kings Mountain, N. C., from the Carolina Specialty Co.

The Dunean Mills, Greenville, S. C., recently placed order for an additional lot of Sipp-Eastwood double deck winders through the Carolina Specialty Co.

It was recently reported that the buying of $125,000 worth of new machinery for the plant at Whitmire, S. C. was discussed at a meeting of the board of directors of the Aragon-Baldwin Cotton Mills, of Chester, S. C.

Contract for the construction of a spinning department has been awarded by the Southern Pile Fabrics Co., Greenville, S. C., to the Gallivan Bldg. Co.

It has been reported that additional equipment has been installed in the East Lake plant of the Richmond Spinning Mills, Chattanooga, Tenn.

A new company has been organized in McMinnville, Tenn. to do commission throwing of silk and rayon under the name of Welwood-Crossville Silk Throwsters, Inc., with John C. Welwood, Jr. as president. It was stated that the plant would begin operations on August 1st with 20,000 spindles.

Angle Silk Mills, Inc., Rocky Mount, Va., recently purchased 48 new 54-inch "super-silk" looms from Crompton and Knowles Loom Works. This brings the plant's productive equipment up to 144 looms.

Combing equipment has been purchased by the Brookside Mills, Knoxville, Tenn., and they will soon start production of combed fabrics.

Southern Brighton Mills, Shannon, Ga., recently ordered 674 day and night counters from the Durant Mfg. Co., of Milwaukee, Wis. The counters are to be installed on new looms recently ordered by these mills.

Comment on the Cotton Market

New Orleans, July 15th., 1931.

THE RECENT important advance in the cotton market, which was due mainly to President Hoover's German moratorium plan, failed to hold. In fact values suffered an important decline of late, or since near the close of June, for while the moratorium plan was accepted in principle by France and other interested nations, there subsequently developed in Germany a financial crisis, attributed to the refusal of France to participate in efforts to extend a very large loan to Germany except under political restrictions. However, negotiations are still going on with the hope that favorable results may be obtained.

Other depressing influences during the past two weeks were a weak stock market, unfavorable European trade advices, failure of domestic business to improve, the decline in grain, beneficial rains in the cotton region, and an average reduction in this year's cotton acreage of only 10 per cent.

BRITISH BOARD OF TRADE REPORT FOR JUNE

Year—	1931	1930	1929
Exports of yarn, lbs..	10,000,000	11,000,000	12,000,000
Exports of cloth, yards	133,000,000	159,000,000	224,000,000

ASSOCIATION OF COTTON TEXTILE MERCHANTS OF NEW YORK JUNE STATISTICS

Yards—	June 1931 5 weeks	May 1931 4 weeks	June 1930 4 weeks
Production	260,163,000	225,392,000	198,539,000
Sales	355,902,000	160,029,000	129,947,000
Shipments	273,871,000	205,603,000	182,652,000
Stocks	288,235,000	301,943,000	466,368,000
Unfilled orders	330,575,000	248,544,000	219,040,000

June sales of domestic cotton goods were 136.8 per cent of production against 71.0 in May of this year and 65.5 in June last year. Shipments were 105 per cent of production against 91.2 in May this year and 92.0 in June last year. Stocks at the end of June decreased 4.5 per cent against an increase in May this year of 7.0 and an increase in June last year of 3.5. Unfilled orders at end of June increased 33.0 per cent against a decrease in May this year of 15.5 and a decrease in June last year of 19.4.

UNITED STATES CENSUS REPORT

United States— Bales—	This season	Last season
Consumption including linters, June	516,821	464,432
Consumption lint, June	455,388	405,236
Consumption linters, June	61,433	59,196
Consumption lint, 11 months	4,820,430	5,726,818
Consumption linters, 11 months	645,143	745,868
Consumption including linters, 11 months	5,465,573	6,472,686
Mill stocks June 30th.	1,130,514	1,356,664
Stocks in public storage and warehouses June 30th.	4,970,626	3,105,226
Stocks in mills, public storage and warehouses, June 30th.	6,101,140	4,461,890
Active spindles during June	25,998,910	27,659,308

SECRETARY HESTER'S FIGURES MOVEMENT TO MARKET AND EXPORTS FROM THE UNITED STATES

July 10th.— Bales—	This season	Last season
Week's in sight (marketed	8,818	10,613
August 1st. to July 10th.	13,855,846	14,933,692
Week's exports, including Canada	68,700	34,900
August 1st. to July 10th.	6,746,400	6,736,400

Exports from the United States since August 1st., which were nearly 500,000 bales less than last season a few months ago, are now slightly larger than to even date last year.

SPINNERS TAKINGS OF AMERICAN COTTON

August 1 to July 10 Bales—	This season	Last season
Southern mills	4,044,000	4,917,000
North and Canada	1,512 000	1,866,000
Foreign mills	6,033,000	6,614,000
Total since Aug. 1st.	11,589,000	13,397,000

WORLD'S VISIBLE SUPPLY OF COTTON, JULY 10th.

Bales—	This year	Last year
American	5,348,611	3,330,140
Other kinds	2,306,000	2,500,000
All kinds	7,654,611	5,830,140

Garside of the New York Cotton Exchange Service was quoted recently as saying in effect that present indications are for a world's consumption of American lint cotton, of about 11,100,000 bales, that he makes this season's supply of American lint, including the crop, 20,115,000 bales, and therefore a world's carry-over of American lint of around 9,000,000 bales is indicated.

TOTAL AVERAGE RAINFALL IN TEXAS, IN INCHES

Year—	1931	1930	1929	1928	Normal
For June	1.99	2.14	1.49	3.91	3.20
Nov. 1 to June 30th.	19.74	19.10	22.94	17.03	20.26

For week ended July 10 spot sales at reporting southern markets were 10,155 bales versus 8,148 for corresponding week last year.

Thus far this month there have been further beneficial rains in nearly all sections of Texas, but more moisture in localities there would probably be of benefit, which probably applies to parts of the central and eastern belts also.

As to the new crop outlook, Washington's summary for week ended July 14 stated: "Mostly above normal temperatures in the cotton belt, with beneficial rains in the east and much of the western area, especially in the northern two-thirds of Texas and in Oklahoma.

"In Texas the progress and condition of cotton is generally good, plants are fruiting fairly well in the central and south, but needing more rain locally. Cotton is still small and late, but healthy. In Oklahoma the growth of cotton was fair to good, but further rain is needed.

"In the central states of the cotton belt the progress of cotton was good. Progress in Arkansas was excellent except on dry uplands in the west portion, and some improvement was reported where rains occurred in Louisiana. In Tennessee, Mississippi and Alabama the growth of cotton was variable, depending largely on local rains; growth was mostly fair to good, but slow in many localities because of drouth.

"Rains in Florida and parts of Georgia were helpful, but in the latter state rainfall was very spotted, and many places are still dry. In the Carolinas and Virginia conditions continued mostly favorable, with growth generally satisfactory."

The recent rains over much of the interior will likely serve to maintain the condition of the crop for the present, which, according to the average of eight recent private reports, averaged about 71.1, ranging from 68.5 to 74.2. It is possible that the recent rains may improve the condition of the crop, which possibility is worthy of consideration since the average condition of the crop, as of August 1st. last year was only 62.2, and the ten year average for August 1st. was only about 67.4.

The first government crop condition and yield forecast report, as of August 1st., will be released on August 8th.

Besides the average condition of the crop, when figuring on the probable indicated production, the average ten per cent decrease in acreage and the decrease in the use of fertilizer have to be taken into consideration.

According to the National Fertilizer Association sales of fertilizer tags for 13 southern states, from December 1 to June 30, were 27.9 per cent less than for same period last season.

Recent advices from the interior were to effect that sales of new crop cotton for fall shipment are small and considerably below normal.

Under date of July 15, Washington press advices state in part: "After conferring with Farm Board officials, E. F. Creekmore, vice-president and general manager of the American Cotton Co-operative Association, left for New Orleans today to prepare for the meeting of the directors of the association on July 20. The meeting of the directors has been called to decide the amount of advances that will be allowed on the new crop and other matters relating to marketing. In New York Mr. Creekmore found cotton brokers generally optimistic, although there was some feeling of apprehension as to the effect that the German situation may have on marketing. The Farm Board is not yet ready to announce what its policy will be regarding its cotton holdings. A statement of policy is expected, however, before August 1."

The future of the market will likely be governed mainly by developments in Germany, by progress of the growing crop and by the character of the trade demand, etc. So

er woven fabrics.

Another suggestion emphasizes the value of cotton bagging for cotton bales, and proposes that mills pay for seven pounds of additional cotton at whatever price they purchase their cotton on any day, provided the cotton is wrapped in 100 per cent cotton bagging. Hundreds of mills and ginners and farmers throughout the country have endorsed this program, and unquestionably a large percentage of this year's crop will be wrapped in cotton. It is estimated that if the cotton of the South could be wrapped in 100 per cent cotton bagging, this increased use would consume about 165,000 bales of the surplus.

As pointed out last month, the starch manufacturers have agreed to ship starch to mills in cotton bags at the same price as other kinds of bags. There are hundreds of other potential uses of cotton that can be extended. Since for the current year the only way out is to "use it up", it is incumbent upon all mills, growers and others interested, to study and apply the principles of increased use for the year 1931-1932.

Meetings of Carolina Textile Associations.

THE COTTON MANUFACTURERS ASSOCIATION of South Carolina held its annual meeting at the Grove Park Inn, Asheville, N. C., on June 27th. T. M. Marchant retired as president after three years of service, and W. S. Nicholson, president of the Union-Buffalo Mills Co., was elected to succeed him. Marshall Beattie and Marshall Orr were made vice-presidents; and W. P. Jacobs, of Clinton, S. C., was elected secretary under a resolution adopted to create a full-time secretary's position with increased activity.

The annual meeting of the Cotton Manufacturers Association of North Carolina was held at Sedgefield Inn, near Greensboro, N. C., on June 19th and 20th. K. P. Lewis, secretary-treasurer, Erwin Cotton Mills Co., West Durham, N. C., was made president of the Association, succeeding W. D. Briggs, of Raleigh. Three vice-presidents were elected: Charles A. Cannon, Kannapolis, A. M. Fairley, of Laurinburg, and L. W. Clark, of Spray. Hunter Marshall, Jr., of Charlotte, was re-elected secretary-treasurer.

Advertising Mills Show Improvement.

SEVERAL WEEKS AGO, President Sloan of the Institute distributed an interesting commentary on the relatively greater improvement experienced during the first five months of 1931 by fine cotton goods and print cloth yarn fabrics, as compared with all other cotton gray goods. Sales of the former for the period were 14 per cent greater than for the same period last year and only 7 per cent less than during the five-month period of peak activity in 1929; while sales of all other cotton gray goods during the period were 13 per cent less than for the same period in 1930. This "noteworthy partiality" toward fabrics which have been co-operatively advertised was explained by Mr. Sloan to be due to the concerted advertising campaign on these fabrics, improvement in styling, and the growing fashion importance of cotton.

What the Southern Mills are Doing

WEST BOYLSTON MFG. CO., Montgomery, Ala., recently announced that they had received bids for the construction of a new building. Robert & Co., Inc., Bona Allen Bldg., Atlanta, Ga., are the engineers.

Contract has been let to Huntington and Guerry, Inc., of Greenville, S. C., for the installation of all electric wiring, motors, etc., in the new Clark Thread Co. mill at Austell, Ga. The construction of 60 cottages for employees is being carried on by Fiske-Carter Construction Co., Greenville, S. C.

Charles Bond Co., of Philadelphia, recently received an order from Southern Brighton Mills for loom strapping for 674 Draper Model X high speed looms to be installed shortly. It is reported that 150 sets of strapping will be furnished each month until the order is completed.

The Southern Silk Mills, Greensboro, N. C., have been operating on a full day-and-night schedule since last August and it is reported are well sold ahead. The installation of new winding machinery and modern sizing equipment now enables the mill to manufacture all types of popular rayon crepes, as well as all types of pure thread silk fabrics.

Contract for the painting of 542 houses in the Lancaster Cotton Mills' village, Lancaster, S. C., has been awarded to Fred Herndon of Lexington, N. C.

A one-story brick building, costing approximately $2,500, has been constructed by the Standard-Coosa-Thatcher Co., Chattanooga, Tenn., and will be used as a cotton classing room with an office for cotton buying.

It has been reported that work is being pushed on the new mill unit of the Tennessee-Eastman Corp., Kingsport, Tenn., for the production of acetate yarns and it is hoped to have the plant ready for regular production in October. It represents an investment of $1,000,000 for machinery.

The Pomona Mills, Inc., Greensboro, N. C., recently purchased a Hermas automatic shearing machine, with vertical brusher, through the Carolina Specialty Co., Charlotte, N. C. A wide vacuum extractor, manufactured by the Philadelphia Drying Machinery Co. was purchased by the Neisler Mills, Kings Mountain, N. C., from the Carolina Specialty Co.

The Dunean Mills, Greenville, S. C., recently placed order for an additional lot of Sipp-Eastwood double deck winders through the Carolina Specialty Co.

It was recently reported that the buying of $125,000 worth of new machinery for the plant at Whitmire, S. C. was discussed at a meeting of the board of directors of the Aragon-Baldwin Cotton Mills, of Chester, S. C.

Contract for the construction of a spinning department has been awarded by the Southern Pile Fabrics Co., Greenville, S. C., to the Gallivan Bldg. Co.

It has been reported that additional equipment has been installed in the East Lake plant of the Richmond Spinning Mills, Chattanooga, Tenn.

A new company has been organized in McMinnville, Tenn. to do commission throwing of silk and rayon under the name of Welwood-Crossville Silk Throwsters, Inc., with John C. Welwood, Jr. as president. It was stated that the plant would begin operations on August 1st with 20,000 spindles.

Angle Silk Mills, Inc., Rocky Mount, Va., recently purchased 48 new 54-inch "super-silk" looms from Crompton and Knowles Loom Works. This brings the plant's productive equipment up to 144 looms.

Combing equipment has been purchased by the Brookside Mills, Knoxville, Tenn., and they will soon start production of combed fabrics.

Southern Brighton Mills, Shannon, Ga., recently ordered 674 day and night counters from the Durant Mfg. Co., of Milwaukee, Wis. The counters are to be installed on new looms recently ordered by these mills.

Comment on the Cotton Market

New Orleans, July 15th., 1931.

THE RECENT important advance in the cotton market, which was due mainly to President Hoover's German moratorium plan, failed to hold. In fact values suffered an important decline of late, or since near the close of June, for while the moratorium plan was accepted in principle by France and other interested nations, there subsequently developed in Germany a financial crisis, attributed to the refusal of France to participate in efforts to extend a very large loan to Germany except under political restrictions. However, negotiations are still going on with the hope that favorable results may be obtained.

Other depressing influences during the past two weeks were a weak stock market, unfavorable European trade advices, failure of domestic business to improve, the decline in grain, beneficial rains in the cotton region, and an average reduction in this year's cotton acreage of only 10 per cent.

BRITISH BOARD OF TRADE REPORT FOR JUNE

Year—	1931	1930	1929
Exports of yarn, lbs...	10,000,000	11,000,000	12,000,000
Exports of cloth, yards	133,000,000	159,000,000	224,000,000

ASSOCIATION OF COTTON TEXTILE MERCHANTS OF NEW YORK JUNE STATISTICS

Yards—	June 1931 5 weeks	May 1931 4 weeks	June 1930 4 weeks
Production	260,163,000	225,392,000	198,539,000
Sales	355,902,000	160,029,000	129,947,000
Shipments	273,871,000	205,603,000	182,652,000
Stocks	288,235,000	301,943,000	466,368,000
Unfilled orders	330,575,000	248,544,000	219,040,000

June sales of domestic cotton goods were 136.8 per cent of production against 71.0 in May of this year and 65.5 in June last year. Shipments were 105 per cent of production against 91.2 in May this year and 92.0 in June last year. Stocks at the end of June decreased 4.5 per cent against an increase in May this year of 7.0 and an increase in June last year of 3.5. Unfilled orders at end of June increased 33.0 per cent against a decrease in May this year of 15.5 and a decrease in June last year of 19.4.

UNITED STATES CENSUS REPORT

United States— Bales—	This season	Last season
Consumption including linters, June	516,821	464,432
Consumption lint, June	455,388	405,236
Consumption linters, June	61,433	59,196
Consumption lint, 11 months	4,820,430	5,726,818
Consumption linters, 11 months	645,143	745,868
Consumption including linters, 11 months	5,465,573	6,472,686
Mill stocks June 30th.	1,130,514	1,356,664
Stocks in public storage and warehouses June 30th.	4,970,626	3,105,226
Stocks in mills, public storage and warehouses, June 30th.	6,101,140	4,461,890
Active spindles during June	25,998,910	27,659,308

SECRETARY HESTER'S FIGURES MOVEMENT TO MARKET AND EXPORTS FROM THE UNITED STATES

July 10th.— Bales—	This season	Last season
Week's in sight (marketed	8,818	10,613
August 1st. to July 10th.	13,855,846	14,933,692
Week's exports, including Canada	68,700	34,900
August 1st. to July 10th.	6,746,400	6,736,400

Exports from the United States since August 1st., which were nearly 500,000 bales less than last season a few months ago, are now slightly larger than to even date last year.

SPINNERS TAKINGS OF AMERICAN COTTON
August 1 to July 10

Bales—	This season	Last season
Southern mills	4,044,000	4,917,000
North and Canada	1,512,000	1,866,000
Foreign mills	6,033,000	6,614,000
Total since Aug. 1st.	11,589,000	13,397,000

WORLD'S VISIBLE SUPPLY OF COTTON, JULY 10th.

Bales—	This year	Last year
American	5,348,611	3,330,140
Other kinds	2,306,000	2,500,000
All kinds	7,654,611	5,830,140

Garside of the New York Cotton Exchange Service was quoted recently as saying in effect that present indications are for a world's consumption of American lint cotton, of about 11,100,000 bales, that he makes this season's supply of American lint, including the crop, 20,115,000 bales, and therefore a world's carry-over of American lint of around 9,000,000 bales is indicated.

TOTAL AVERAGE RAINFALL IN TEXAS, IN INCHES

Year—	1931	1930	1929	1928	Normal
For June	1.99	2.14	1.49	3.91	3.20
Nov. 1 to June 30th.	19.74	19.10	22.94	17.03	20.26

For week ended July 10 spot sales at reporting southern markets were 10,155 bales versus 8,148 for corresponding week last year.

Thus far this month there have been further beneficial rains in nearly all sections of Texas, but more moisture in localities there would probably be of benefit, which probably applies to parts of the central and eastern belts also.

As to the new crop outlook, Washington's summary for week ended July 14 stated: "Mostly above normal temperatures in the cotton belt, with beneficial rains in the east and much of the western area, especially in the northern two-thirds of Texas and in Oklahoma.

"In Texas the progress and condition of cotton is generally good, plants are fruiting fairly well in the central and south, but needing more rain locally. Cotton is still small and late, but healthy. In Oklahoma the growth of cotton was fair to good, but further rain is needed.

"In the central states of the cotton belt the progress of cotton was good. Progress in Arkansas was excellent except on dry uplands in the west portion, and some improvement was reported where rains occurred in Louisiana. In Tennessee, Mississippi and Alabama the growth of cotton was variable, depending largely on local rains; growth was mostly fair to good, but slow in many localities because of drouth.

"Rains in Florida and parts of Georgia were helpful, but in the latter state rainfall was very spotted, and many places are still dry. In the Carolinas and Virginia conditions continued mostly favorable, with growth generally satisfactory."

The recent rains over much of the interior will likely serve to maintain the condition of the crop for the present, which, according to the average of eight recent private reports, averaged about 71.1, ranging from 68.5 to 74.2. It is possible that the recent rains may improve the condition of the crop, which possibility is worthy of consideration since the average condition of the crop, as of August 1st. last year was only 62.2, and the ten year average for August 1st. was only about 67.4.

The first government crop condition and yield forecast report, as of August 1st., will be released on August 8th.

Besides the average condition of the crop, when figuring on the probable indicated production, the average ten per cent decrease in acreage and the decrease in the use of fertilizer have to be taken into consideration.

According to the National Fertilizer Association sales of fertilizer tags for 13 southern states, from December 1 to June 30, were 27.9 per cent less than for same period last season.

Recent advices from the interior were to effect that sales of new crop cotton for fall shipment are small and considerably below normal.

Under date of July 15, Washington press advices state in part: "After conferring with Farm Board officials, E. F. Creekmore, vice-president and general manager of the American Cotton Co-operative Association, left for New Orleans today to prepare for the meeting of the directors of the association on July 20. The meeting of the directors has been called to decide the amount of advances that will be allowed on the new crop and other matters relating to marketing. In New York Mr. Creekmore found cotton brokers generally optimistic, although there was some feeling of apprehension as to the effect that the German situation may have on marketing. The Farm Board is not yet ready to announce what its policy will be regarding its cotton holdings. A statement of policy is expected, however, before August 1."

The future of the market will likely be governed mainly by developments in Germany, by progress of the growing crop and by the character of the trade demand, etc. So

far as the financial situation in Germany is concerned, chances appear to favor improvement since all the world is anxious to emerge from the universal depression, and work for peace and the return of prosperity.

New England Mill Situation

July 18, 1931.

ADDED CURTAILMENT tending to bring production down to a basis of about 60 hours weekly has been made effective in many of the fine cotton goods mills in the New England area in order to offset the ordinarily lighter business of the summer months. This reduction in output, together with some extraneous developments which encouraged buyers to order ahead in better quantities, has tended to strengthen the position of the mills in regard to standard fine goods. The mills have continued to enjoy a satisfactory demand for fancies from several different departments of the trade, and are well sold ahead in a number of instances. Nevertheless, it is a difficult period for the mills in that buying has been intermittent and spasmodic, a normal and steady movement of goods has been lacking, and producers have yielded in many cases to price pressure in order to get forward orders.

Latterly it has been indicated that mills have had some response to the generally bullish attitude that developed from the Hoover debt moratorium plan. The debt plan came at about the same moment as inventory taking. It encouraged buyers to make heavier purchases at a moment when mills were willing to make concessions incident to an inventory period. The prices of such staple articles as combed lawns, combed voiles, combed broadcloths, and other descriptions receded to as low levels as the market has seen in a long period, and on isolated constructions to still lower marks. Orders for some millions of yards were understood to have been taken by some of the Eastern fine goods mills during this period. Subsequently, when the German situation became more serious and financial markets reacted, buyers were less willing to take on goods, so that the middle of the present month finds business in the staples of the Eastern mills in a momentarily slow state.

Fine goods mills in New England are, however, securing a fair amount of business in fancies. The group of mills in Fall River which are manufacturing fancy curtain materials and marquisettes are declared to be in an even stronger position than was the case in June, and are keeping themselves sold some weeks ahead. Some of these are making little else than curtain goods, and the advantages of hanging up a mill for long term operation on one type of fabric are obvious in a market that is too often given to small lot orders and constant changes of style and construction. Some of the mills making Jacquard underwear cloths in southern New England have recently slashed prices considerably to take a large business which they evidently find attractive despite the lack of ability of most of their competitors so to operate and come out whole. More activity in shirtings is indicated, and the recent effort of mills to carry the brand of cloth through to the consuming market has here been an interesting development, notably in the recent promotion given the King Philip Mill unit of the Berkshire Spinning Associates for shirts made of King Philip broadcloth. Such promotional activity on the part of the Pepperell Manufacturing Company, extending into new fields, has also been watched with interest.

The mills making fine grades of rayon and rayon-and-cotton fabrics have enjoyed a good business on all rayon or all acetate panne satins, which run in price brackets of 48½ cents up to 90 cents per yard, and for which much is promised in subsequent seasons. Mills are currently getting orders for fair quantities of contract rayon and cotton shantungs, which are also regarded as a cloth of greater possibilities. The French type crepes made with voile twist filling have been a source of yardage orders for the New England mills. Manufacturers of fancy handkerchief cloths have been getting up lines for the spring, and contracts are now beginning to come in from important buyers. Mesh cloths, both rayon and mixed and all cotton, continue of considerable interest in the markets, and some important organizations are planning their further promotion.

Among the individual mills there have been few new developments of moment during the past fortnight. One of the most encouraging features in the New England trade has been the report of the Nashua Manufacturing Company, who are the largest manufacturers of blankets in the world as well as producers of other items. Incoming orders in May have been more than 40 per cent in excess of last year, according to this report, which covers the part of the fiscal year dating from November 1, 1930. Shipments are 10 to 15 per cent greater. Indian Head cloth as well as blankets have been so favorably affected, and it is significant that for blankets the biggest part of the year is just opening. Current operations are now 15 per cent ahead of a year ago. Besides this a stock reduction has been wrought by careful operation during earlier months.

Pepperell Manufacturing Company announced in Boston during the period that due to present market circumstances its quarterly dividend would be cut from $2 to $1.50, or the annual rate from $8 to $6. The $8 rate has been in effect since 1916, with extras declared in 1917, 1918, and 1920. Conservatism rather than necessity is reported the reason for this change. The company has not issued an official earnings statement yet, although the last statement was very strong, and the company since has netted over $2,000,000 by sale of water power rights on the Saco River in Maine in addition to its regular operations.

Dwight Manufacturing Company announced a deficit of $1,808,053 for the year ended May 30, compared with $1,316,300 the year before. Current assets after all deductions were $3,237,807 and current liabilities $1,982,886, and working capital $1,254,931 against $1,853,171 a year ago. Inventories were $1,926,537 against $2,924,400 a year ago. Treasurer Nichols reported that work at the Chicopee plant had been run out and much machinery removed to the Somersworth and Alabama City mills. The Chicopee property has been transferred. The No. 1 mill at Somersworth is shut down, and manufacturing is confined to the 55,000 spindle No. 2 mill which is making Dwight Anchor sheetings. Changes have also been affected toward the improvement of the Southern unit.

The Hoosac Mills Corporation has filed notice with the state of Massachusetts of its intention to increase its capital stock in connection with the plan for consolidation and reorganization of the Butler Mill, Hoosac Cotton Mills, and New Bedford Cotton Mills Corporation making up the Associated Textile Companies.

In New Bedford much interest has been shown in the further cash distribution of $2 per share to stockholders of the Bristol Manufacturing Corporation, bringing the total to $41 since Jerome A. Newman and his interests acquired control by buying 85 per cent of the stock at $39 per share. The mill is being liquidated and machinery disposed of, although the buildings remain. New Bedford is disturbed by the profitable nature of this liquidation, holding it had enough to lose an established industry, but worse when outsiders can come into a city, put people out of work, and make money at the community's loss.

Andrew G. Pierce, president of the Grinnell Mill, announced plans for a cash disbursement at an early date made possible by disposal of some tangible assets not essential to further conduct of business. The mill is shut down as it is deemed inadvisable to operate at present, but the way is left open for reopening in the event that conditions warrant such action.

The Lincoln Manufacturing Company plant, from which machinery was removed, and real estate was sold at auction to the Davis-Lincoln Realty corporation for $25,000 plus 1931 city taxes. Davis Mill No. 2 was withdrawn from sale due to dispute concerning connections between the No. 1 and No. 2 plants. The realty corporation was formed by the General Cotton Corporation to handle parts of the two plants not needed in manufacturing. It was the only bidder.

New Textile Equipment and Publications

Smith-Drum Develops New Type of Skein Dyeing Machine.

Smith, Drum and Company, Allegheny Avenue below 5th Street, Philadelphia, Pa., have announced the development of a new type skein dyeing machine which is a radical departure from previous standard practice. It operates on the principle of the movement of both yarn and liquor, embodying both previous principles of moving the yarn through the liquor and moving the liquor through the yarn.

The accompanying illustrations show various features of the machine. Fig. 1 is a view of a three-tube machine.

Fig. 1.

The yarn is suspended on a hollow stationary tube or support over a tank or container for the dye bath. The liquor is drawn from the tank by means of a pump. It is then forced upward and through the tube or support, on which the yarn is hung. The design of the tube or yarn support is such that a large volume of liquor at low pressure is forced through the yarn, causing the skein to rise from the tube and hang suspended in a floating condition. The flow is so controlled that it completely covers the skeins both inside and out, the company points out. After passing through and over the yarn, the liquor pours into the tank. This process is repeated at such a rate that the entire bath goes through and over the yarn about once per minute. Fig. 2 illustrates the flow of the liquor through the system and through and over the yarn on the tube. The portion giving the appearance of a sheet over the tube is in reality the liquor, showing that the yarn is completely covered by the liquor to prevent oxidation.

The cut-a-way view in Fig. 3 illustrates the appearance of the skein hung on the tube, showing the point mentioned about the skein hanging suspended in a floating condition.

The company points out also that the flow of liquor can be diverted entirely from the yarn to circulate only through the system, by means of a by-pass located between the pump and yarn support. This provides an automatic means for thoroughly mixing the dyestuff and chemicals, and it is also possible to heat the bath before and during the actual dyeing process without disturbing the yarn.

The company offers the machine for the application of vat colors on silk, cotton and rayon skeins. They claim that during the dyeing and washing processes, the material is absolutely safe from physical injury as well as from premature oxidation. It is stated that the finest of silk, cotton and rayon yarns are left in excellent winding condition and that there is an economy effected in materials, due to the fact that the ratio of dye liquor to yarn may be held as low as 12 to 1. To insure uniform action on all parts of the skein, automatic means have been provided to occasionally shift the position of the material on the tube.

Among the other points advanced for the machine, by the manufacturers, are the following: Tangling of fine yarn is prevented, it is pointed out,

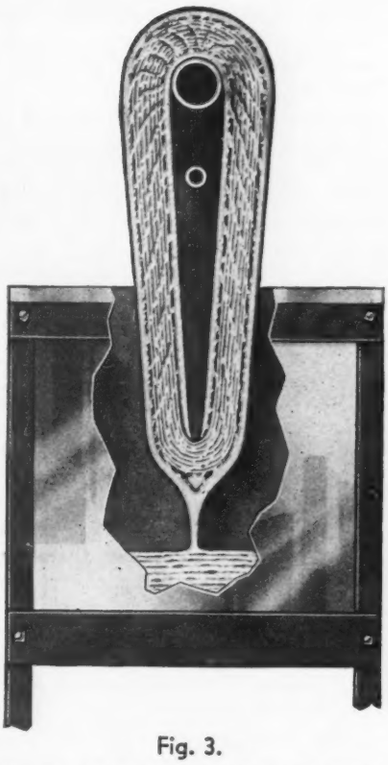


Fig. 3.

due to the fact that there is a dwell of two minutes between each movement of the yarn, and this movement is slight. In addition to this, it is explained, the downward flow of liquor over and through the yarn tends to keep each thread in its original position. Additions to and heating of the bath can be easily accomplished since the yarn is never in direct contact with the main body of the liquor, it is pointed out. Since the entire bath is filtered once each minute before it comes in contact with the yarn, it is further explained, undissolved dyestuff and chemicals and dirty steam cannot cause

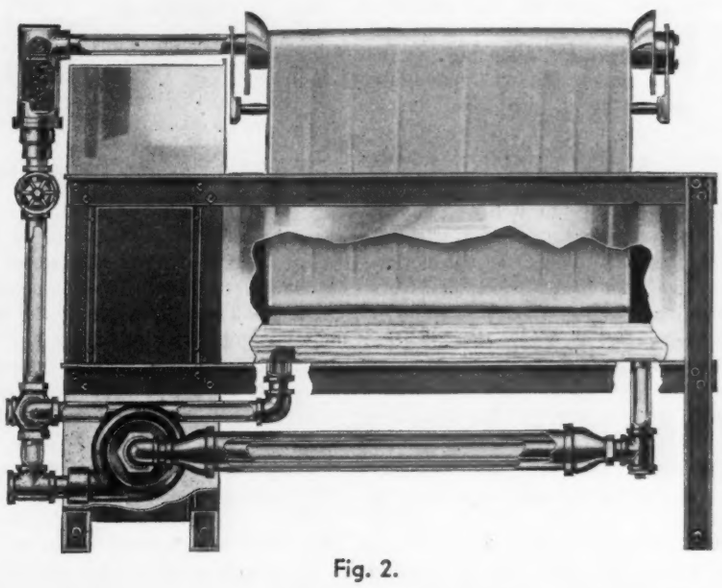


Fig. 2.

trouble. Washing after processing may be accomplished by means of a continuous flow of fresh water directly through the yarn.

Each tube will handle from 2 to 10 pounds, so that a standard seven-tube machine will handle all lots from 15 to 75 pounds, the company points out as an illustration of the machine's flexibility of capacity.

The machine is also offered for degumming pure silk in the application of all of the direct, acid and sulphur colors, as well as for chrome colors on wool and worsted yarn, and for acetate colors. Successful work has been done, in repeated tests, on tram silk, from 2 to 12-thread low twist; Grenadine twist up to 12-thread; rayon from 75 to 300 denier, from 24 to 50 filament, and from 2½ to 5 turns twist; acetate yarns of all deniers and filaments; cotton yarns from 80s single combed peeler gassed and mercerized up to 3 ply 36s gassed and mercerized; and wool and worsted, from 60s single Botany worsted to coarse rug yarn, the company states.

The manufacturers have established a complete dyeing department in their plant, on this new type of equipment, where tests will be conducted on any type of yarn applicable to the machine, it is announced.

:: :: ::

Standardized Bobbin Elevators.

The Terrell Machine Co., Inc., Charlotte, N. C., recently announced the development of a standardized bobbin elevator for the purpose of lifting bobbins from a cleaning machine and dumping them into bobbin boxes. The company had the following remarks to make concerning the handling of bobbins around a cleaning machine:

"The handling of bobbins around a cleaning machine frequently requires an additional employee, most of whose time is occupied in removing small boxes from underneath the machines and dumping them into large boxes which are too high to be used under the machine. If the operator is feeding the machine to full capacity, he does not have time to stop and empty small boxes into large ones without serious loss of time. The production of the machine is also decreased correspondingly."

The elevator shown in Fig. 1, the company states, has been designed to solve this problem in the case of machines for cleaning filling bobbins. Cleaned bobbins are dropped into a hopper from which they are carried by elevator bars to the upper end of the elevator. A standard filling box is placed in position under the discharge end of the elevator, and the bobbins are dropped directly into the box.

It is stated that this elevator may be used with either single or double head Utsman machines, or with the Type K machine. The drive is by belt from a small pulley attached to the

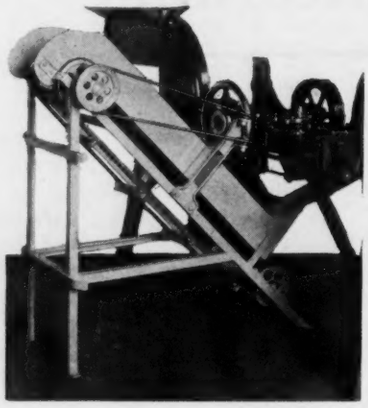


Fig. 1. Elevator for Filling Bobbin Cleaner.

handwheel hub of the Utsman machines, while in the case of the Type K machine the drive pulley is attached to the main drive shaft which runs along one side of the bed.

It is pointed out that the only machine work required to add it to the Utsman machines is the turning of the hub of the handwheel to fit the drive pulley which is bored slightly smaller

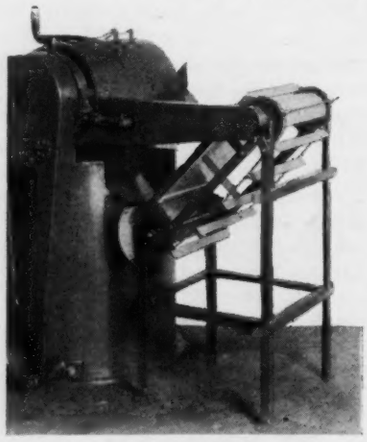


Fig. 2. Elevator for Roving Bobbin Cleaner.

than the hub diameter, this being done to insure a fit if the handwheel hub is not exactly the correct diameter.

On the Type K machines the drive pulley is split, so that it may be bolted to the drive shaft without removing the shaft from its bearings, or otherwise disturbing the adjustment of the machine.

The same handling problems apply to the machines for cleaning roving bobbins. To maintain proper level of the feed table, the discharge was made lower than the side of the average roving box. In the case of these machines, a great many mills have built platforms, using hoists or ramps to elevate boxes of uncleaned bobbins to convenient level for feeding. The operator stands on the same platform, and the discharge is placed near one edge, so that the cleaned bobbins will fall into a box pushed up alongside the platform.

The elevator shown in Fig. 2 lifts the bobbins from the level of the discharge chute to a point above the top of a standard roving box, and drops them into a box which is placed alongside the end of the elevator. The lifting is done by elevator bars, attached to standard conveyor chains.

The drive is through a spur gear, sprockets and a chain, all of which are housed within a guard. The elevator may be attached to all but a very few outstanding Termaco machines by removing two parts already on the machine and substituting two of the elevator parts for those removed. No machine work, other than the removal and replacement of a few parts, is required, the company states.

:: :: ::

Cork Brake Lining For Looms.

Armstrong Cork Company, Lancaster, Pa., are introducing generally to the textile industry a cork brake lining for looms, which is illustrated in the accompanying cut.

It will be noted that this brake lining, made of clean, granulated cork, densely compressed in composition form, has a backing of vulcanized fiber which is firmly cemented to the

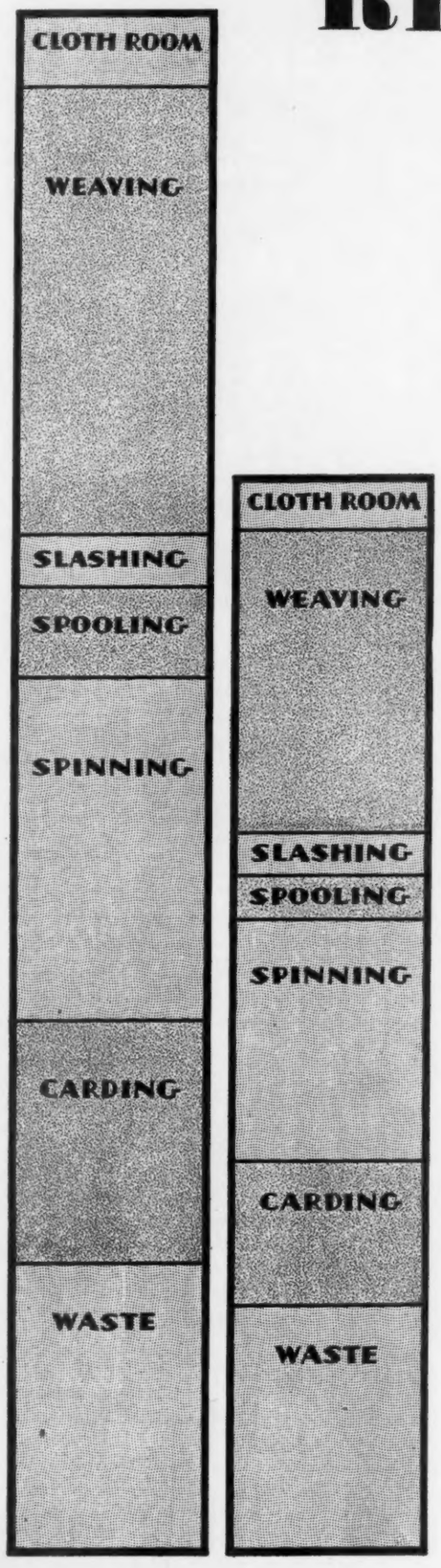
Cork Brake Lining.

cork composition to permit the use of rivets in assembling the lining to the brake bands. The company points out that this lining material has been used as standard equipment on certain types of looms, by a large loom manufacturer for some time.

The company states that due to cork's high coefficient of friction, the braking action of this lining is positive, and the natural resilience of the

Operating Costs

REDUCED 33.6%



ANALYSIS of the operating costs in a mill which has installed New Saco-Lowell-Roth Spinning Frames shows extremely interesting and gratifying results.

The operating staff is pleased at the improvement in the production of a superior product at a lower cost; the management is elated at the improvement in net profit and the ability to sell goods at a profit in a competitive market.

The progressive steps taken to secure these results are simple and practical:

1. **A study made by our engineers with the mill operating staff co-operating.**
2. **Purchase and installation of new machinery and reorganization of drafts and speeds as recommended.**

The chart graphically shows the impressive results obtained in the mill which followed this plan; they are saving almost as much as the entire weave room cost before the reorganization was completed.

These savings are not theoretical or visionary. They are real — reflected every week in the lower gross pay roll, the less cost per pound, in the greater production, and the decrease in seconds.

What has been accomplished in this particular mill can be repeated. Our engineers, co-operating with your own staff, can make the study, interpret the results and formulate recommendations which will tend to improve your operating conditions and your product, and pay a substantial return in lowered costs.

SACO-LOWELL

MANUFACTURERS OF TEXTILE MACHINERY

147 MILK STREET, BOSTON. MASS.

Charlotte, N. C. · Spartanburg, S. C. · Atlanta, Georgia

lining eliminates jarring or vibration. The company also states that the lining does not shrink on account of frictional heat, nor does it expand with humidity.

:: :: ::

Package Dyeing Now Practical for Short Warps.

The one place where package dyeing has not been generally accepted in the past has been when the general run of work in the mill has called for short warps (about 1,500 yards) and special shades; that is, shades which are not likely to be used more than once or at very infrequent intervals, according to the Franklin Process Co., Providence, R. I. In such cases, they state, the contention has been package dyeing is not suitable. The first objection has been that the time consumed in loading the creel is not regained in the warping because of the short yardage. The second objection has been that the left-overs could not be used up on future orders because the shade is not apt to be repeated; and, of course, the percentage of waste on a small poundage is more than on large poundage.

The company states that these objections have admittedly been valid many times in the past, but are seldom so at present due to the fact that they have developed a new system of warping to overcome them. It is stated that the principle is not new, but that the adaptation of the principles of the warping of dyed packages has been worked out with considerable originality in the Franklin Process plant at Providence.

The various units of the system are illustrated in Fig. 1 and Fig. 2. It may be noted that the system is an adaptation of a high speed creel to silk warping; that is, the packages deliver from the creel over end instead of by rotation, and the warp is built up by running a series of sections onto a reel and then onto a section beam instead of running all the ends at once direct to a section beam. The first impression regarding this method, the company states, is apt to be that it is the long way around, but the advantage is due to the fact that the warping is conducted at such high speed. The yarn runs from the packages to the reel at about 300 yards per minute. In running from the reel to the section beam the speed is reduced to approximately 80 to 100 yards per minute, although it can be increased if desirable. This method eliminates the necessity of splitting packages as was formerly necessary, and uses practically all the yarn, the company states. A working example will probably give a clearer understanding:

Assume an order calling for 3,000 ends of 40s/1 yarn, 1,500 yards, to be put up on 6 section beams, 500 ends each. This means about 134 pounds of yarn, or 268 half-pound packages.

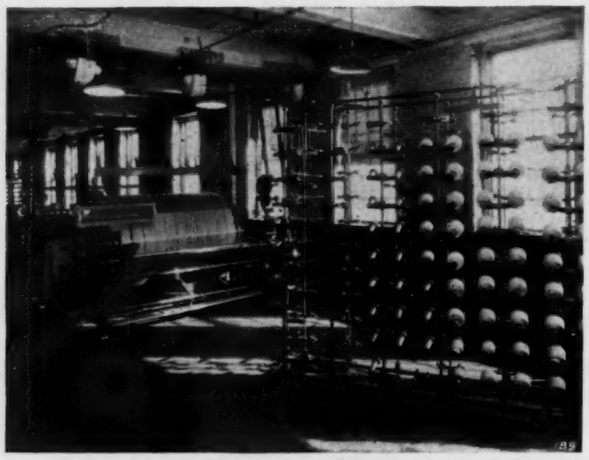
It is pointed out that if the ordinary direct warping method were used in this case, it would be necessary to split the 268 packages into 500 packages, but by the new Franklin Process method practically no rewinding of packages is necessary except, possibly in making up the last section on the reel.

Any size of creel desired can be used, but assume that the creel in this case will hold only 100 packages. The creel is loaded and a warp section of 100 ends is tied in, after which 9,000 yards of this section are run onto the creel. The warp is then cut and tied in again to the left of the first section, when another 9,000 yards are run off. Five sections are run off in this manner to make up the required number of 500 ends, after which the warp is run onto 6 section beams, 1,500 yards each making a total of 3,000 ends.

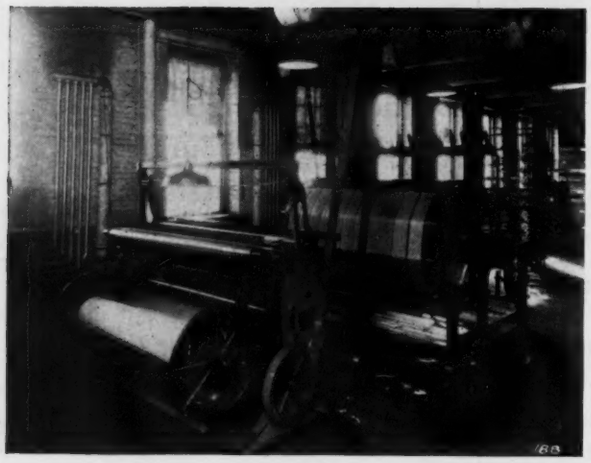
The time which has been consumed by these various operations is as follows:

Loading creel and tieing in...	20 minutes
9,000 yards at *180 yards per minute equals	50 minutes
50 minutes times 5 sections equals	250 minutes
Tieing in 5 sections on reel at 2 minutes each	10 minutes
Laying in on warper comb ...	20 minutes
Tieing in on 6 section beams at 2 minutes each	12 minutes
Warping 6 section beams (1500 yds) at 80 yds./mi.....	112 minutes

*The reel actually runs 300 yards per minute, but only 60 per cent of the theoretical production is figured in actual practice due to stops from breakage and rewinding packages for the last section.



Right, section warping over-end from Franklin packages, 300 yards per minute.



Left, warping from reel to section beam, 80 yards a minute.

:: :: ::

Preloaded Ball Bearing.

SKF Industries, Inc., 40 East 34th Street, New York, recently published two very interesting pamphlets—one entitled "Preloaded Ball Bearings for Precision Spindles" and the other, "Ball and Roller Bearing Pillow Blocks Shaft Hangers."

In the first named pamphlet the company stated, naturally the use of ball bearings on the spindles of all classes of precision machinery has steadily increased and is now considered standard equipment by many machine tool manufacturers. When properly mounted they assure not only a high degree of accuracy and permanent rigidity, but to these essential features there are added the following incidental advantages which are not inconsid-

TEXTILE MILL BELTS DON'T HAVE TO STRETCH AND FRAZZLE and these two belts prove it

THE first of the two new textile belts that Goodyear found a need for in its own fabric mills was the Goodyear COMPASS (Cord) Endless Belt — that belt *cored with cord* — which has revolutionized individual motor drives on textile machinery by its *nearly stretchless* service.

Tensions in the COMPASS Endless Belt are carried in stout inlaid endless cords. The fabric envelope takes surface wear from the pulleys—while the core of cords carries the load. On Vertical Openers, Pickers, Lappers, and Twisters this belt gives perfect service.

A further development was the Goodyear THOR Belt, seamless*—a belt with all the advantages of ply-belting in raw-edge construction *but with protected edges.* Here is a belt that will not easily fray in shifting—nor tear under strain in the center. For Cards, Frames, Slubbers, Spoolers, and Looms it brings invaluable savings.

The G. T. M.—Goodyear Technical Man — will tell you about these two new textile belts. He knows the specifications for each of your drives. He can save money for you now. To see him, just write Goodyear, Akron, Ohio, or Los Angeles, California, and ask the G. T. M. to call.

Goodyear THOR Belting, seamless, is made in widths up to and including 16" — THOR quality of special construction is available for larger sizes

THE GREATEST NAME IN RUBBER

GOODYEAR

TEXTILE BELTING

erable: "Smooth, vibrationless operation is assured, resulting in longer life of the cutting tool as well as of the drive mechanism, whether gear, belt, chain or electric motor drive.

"The ball bearing has a lower coefficient of friction than any other type of bearing, so that more power becomes available for doing useful work.

"The bearing can be interchanged or replaced without the scraping or hand-fitting necessary with the plain sleeve type of bearing.

"Maintenance costs are a minimum because of the small lubrication requirements of the ball bearing and its freedom from wear when adequately protected against the entrance of dirt or abrasive."

In regards to the hangers, the company states that increasing demands of industry have definitely focused attention on the need of proper housings for anti-friction bearings, not only on shaft hangers but perhaps to an even greater extent on many and varied types of machine applications—if the bearings are to render the utmost service and fully meet the exacting requirements of good performance.

:: :: ::

Speed Reducers.

A new series of small Herringbone-Maag speed reducers has just been developed by the W. A. Jones Foundry & Machine Company, 4401 W. Roosevelt Road, Chicago, Ill., with capacities up to 18 h.p., and reduction ratios from 12 to 1 up to 48 to 1. The company states that the smallest reducer in this series is 20 5/16-inch long and 14¼-inch high, and that the base measures 10¼-inch wide.

For universal application, it is stated, all the reducers in this series have high and low speed shaft extensions on both sides, which eliminates the need of a right or left hand assembly.

This company also states that engineers and production men will be interested in the chapter on "Selecting the Correct Worm Gear Speed Reducer for the Job," which appears in the new Worm Gear Speed Reducer Book, which they have just issued. They state that this chapter makes it very simple to select the right reducer, and that there are in the book other data of practical up-to-date value on worm gear speed reducers. A copy of the book will be sent to anyone writing the W. A. Jones Co.

:: :: ::

Celanthrene Violet B Extra Double Powder.

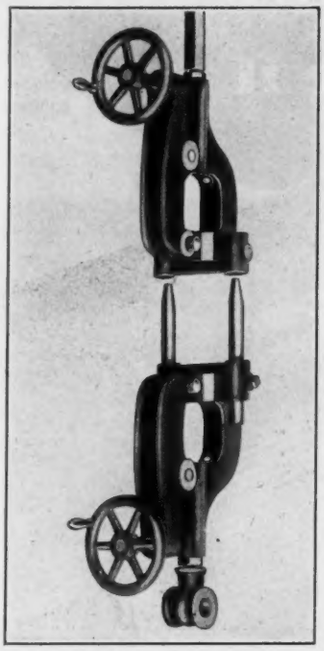
Possessing very good general fastness, leveling and penetrating qualities, Celanthrene Violet B Extra Double Powder is of especial interest for dyeing Celanese yarns, lining materials, dress goods and knitted fabrics, according to the Newport Chemical Works, Inc., Passaic, N. J. The company also states that this new dyestuff will leave cotton and rayon clean in materials containing these fibers, which is particularly of interest for dyeing hosiery or other materials in which these fibers are present.

:: :: ::

New Alignment Pins for Fabric Jaws on Vertical Testers.

Information furnished by Henry L. Scott & Co., Providence, R. I., is that Committee D-13, American Society for Testing Materials, has voted to be incorporated in the annual report as a tentative revision of the Standard Specifications for Textile Testing Machines, the following paragraph concerning alignment pins on fabric jaws of vertical testing machines.

"In the case of vertical or upright testing machines, it is recommended



Alignment pins for tester.

that the lower jaw of the testing machine be provided with two tapered pins, one on each side, about ½-inch in diameter, which project upward and are adjustable for different spacing between the top and bottom jaws. The upper end of these pins shall fit into the tapered holes in the upper jaw when placing the specimen, but disengaging when the jaws separate. In this way they regulate the distance between the jaws and hold them in positive alignment while the test specimen is being inserted."

An illustration of a pair of clamps arranged with the alignment pins called for in these specifications, is shown herewith. The device is manufactured under patent by the Scott company who have guaranteed the Society that only a fair profit will be charged for this feature.

:: :: ::

Demonstration of New Weighing Equipment.

One hundred and twenty-five scalemen, engineers and executives were astounded at a demonstration of new weighing equipment which was recently given in Pittsburgh. Before the demonstration, C. C. Neale, of the Toledo Scale Co., expressed his intention of replacing and interchanging pivots and bearings in a heavy duty scale. Many of those present expressed the opinion that it couldn't be done.

Mechanics under Mr. Neale's direction removed the old pivots and put in new ones in ten minutes and the indicator split the line on every test, the Toledo Scale Co. states. It is pointed out that it was formerly necessary to hone each pivot carefully and check repeatedly with gauges, but that now, as a result of revolutionary invention, it is possible to replace pivots and bearings with little or no loss of time to the scale user.

:: :: ::

The "Constitution" Sails Again.

The "sailing" days of the cotton industry were recalled when the Wellington, Sears & Company, New York, acting for the West Point Manufacturing Company, West Point, Ga., recently made a donation of 12,500 square yards of oceanic duck for the sails of the refitted U. S. frigate, Constitution, just setting out on her exhibition cruise to the nation's ports, and navigable rivers. "Sentiment for the earlier association of our company prompted us to see that 'Old Ironsides' did not lack for sails", said H. L. Bailey, president of the company.

:: :: ::

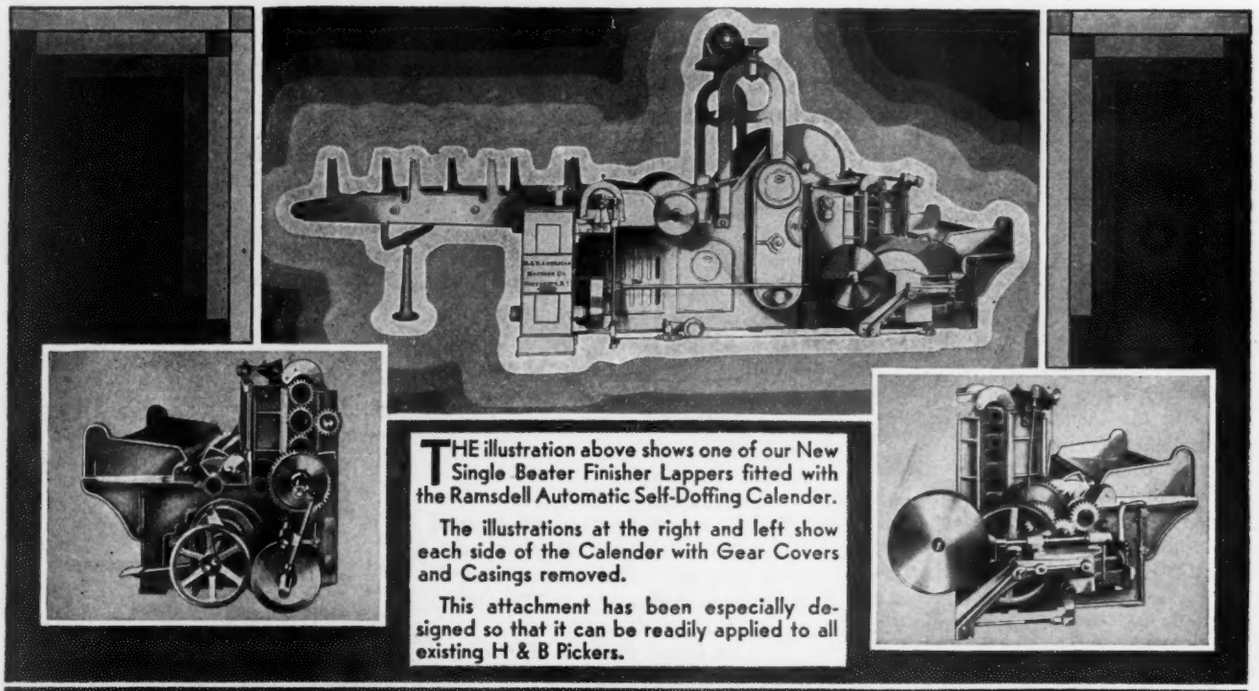
New Dyestuff Announced.

The dyestuffs department of E. I. du Pont de Nemours & Co. announces Pontamine Fast Orange WS, a direct dyestuff yielding clear, rich shades of orange. It is stated that it is redder and brighter than Pontamine Fast Orange S, and is characterized by its excellent solubility.

Pontamine Fast Orange WS is recommended for the production of brilliant reddish orange shades on all types of cotton, rayon and pure silk. It is said to possess similar fastness to that obtained with Pontamine Fast Orange S, showing good resistance to light, acids, alkalies, water, perspiration, iron and rubbing, and fairly good fastness to washing.

INCREASED PRODUCTION

WITH DECREASED COST OF LABOR, ... POWER AND REPAIRS . . . .



THE illustration above shows one of our New Single Beater Finisher Lappers fitted with the Ramsdell Automatic Self-Doffing Calender.

The illustrations at the right and left show each side of the Calender with Gear Covers and Casings removed.

This attachment has been especially designed so that it can be readily applied to all existing H & B Pickers.

THE RAMSDELL AUTOMATIC SELF-DOFFING CALENDER

UNCANNY in its operation. With almost imperceptible hesitation it automatically removes the completed picker lap, places a new lap roll in the calender, carefully folds over the oncoming sheet of cotton, lowers the lap racks and applies the brake . . . continuous operation from start to finish . . . without assistance of human hands. The results are no bad piecings, no piling up of cotton on the cages, no damaged screens, no starting torque—and with absolutely fixed yardage and weight for every lap.

We shall be glad to provide further detailed information upon request or arrange for a demonstration at your convenience.

8 AUTOMATIC OPERATIONS IN 6½ SECONDS

1. Releasing brake
2. Raising lap racks
3. Severing lap sheet
4. Doffing finished lap
5. Placing new lap roll
6. Folding lap end
7. Lowering lap racks
8. Resetting brake

H & B AMERICAN MACHINE CO.

PAWTUCKET, RHODE ISLAND

BOSTON OFFICE
161 Devonshire Street

ATLANTA OFFICE
815 Atlanta Trust Co. Bldg.

COTTON PREPARATORY AND SPINNING MACHINERY

NEWS ITEMS *with a Textile Slant*

Reorganization of Thies Dyeing & Processing Co.

The reorganization of the Thies Dyeing & Processing Co., Belmont, N. C., effective July 1st, was recently announced. The Piedmont Processing Co., Belmont, N. C., announced that they had acquired the business of the Thies Dyeing & Processing Co. and that the new company would be operated under the management of Gerald A. Cooper, formerly treasurer of Cooper-Kenworthy Company, Providence, R. I., as treasurer and general manager. The officers of the new organization, in addition to Mr. Cooper, are B. E. Geer, Greenville, S. C., president; A. C. Lineberger, Jr., vice-president; and W. H. Crenshaw, assistant treasurer.

Recently the Thies Dyeing & Processing Co. completed the installation of considerable new package and beam dyeing equipment, and the Piedmont Processing Co. announce that in the future they expect to be in a position to offer their patrons any type of dyed or bleached, carded or combed yarn that they may have an occasion to use, in addition to specializing in commission processing.

:: :: ::

Problem Fire Extinguishing Shown Fire Officials.

Before a gathering of several hundred plant and city fire chiefs and safety officials at their Newark test field, the Pyrene Manufacturing Company, Newark, N. J., presented a series of problem fires and demonstrated their proper extinguishing with a variety of chemicals.

Over 30 fires, including motor truck, cabin motor boat, electrical switchboard, oil and gasoline pit, rubbish pile, oil barrel and other difficult hazards, were ignited.

The demonstrators not only showed the correct manner to attack such fires, but also explained to visitors the effects on the burning materials of the chemicals used.

An audience of several hundred, including fire chiefs from cities and municipalities and from industrial plants, safety engineers and officials were led at a lively pace from one blaze to another.

The company points out that among the most spectacular fires was that of a large delivery truck, the motor of which was thoroughly saturated with gasoline, the gasoline line broken to provide a running stream, and a match applied. An actual condition more difficult than is scarcely conceivable, the company points out, yet the blaze was quickly subdued with a hand extinguisher carried on the truck.

:: :: ::

Herman A. Metz Prizes Go to Textile Students.

Four students of the Textile High School, New York, were recently awarded the Herman A. Metz prizes for various activities related to dyeing.

The awards were made as follows: Mary Guccione and Ruth Hirsch received the Herman A. Metz prizes for batik and dyeing; and James Alexander Mills and Louis Conti received the Herman A. Metz chemistry and dyeing rewards.

:: :: ::

A New Seaming and Looping Yarn.

Se-lo is the name of a new seaming and looping yarn for high grade hosiery recently put on the market by Standard-Coosa-Thatcher Co., of Chattanooga, Tenn., and Philadelphia.

It is explained that the new product is made of extra long staple American and Egyptian cottons and is supplied natural and bleached in a complete range of sizes of this class of yarn. It is wound on 5-inch traverse cones, which have a small base measurement, but, on account of the lengthened traverse, will carry more yardage than the ordinary small cone, the company states.

:: :: ::

Removal Notice.

It was recently announced that effective July 20th, the main sales office of the Roessler & Hasslacher Chemical Company, Inc., are located in the Empire State Building, 350 Fifth Ave., New York City, instead of 10 East 40th Street, New York City, the previous location.

:: :: ::

A New Process Developed.

A new method of finishing marquisette curtains whereby they retain their crispness even after repeated exposure and washing, has been perfected by the Bellman-Brook Bleachery of Fairview, N. Y. It is known as the Belmarque finish and is a chemical treatment of the yarn which gives it the necessary crispness and permanently seals the fiber down in the yarn without the use of starches. Vat colors, fast to light and water, are used in the dyeing process.

:: :: ::

Establish Branch Office In Charlotte.

Reeves Pulley Company, Columbus, Ind., recently announced that they had established a direct factory branch office at 912 Johnston Bldg., Charlotte, N. C.

This branch sales and engineering office will be in charge of D. M. McSpadden who has had many years experience in connection with the recommendation and installation of the Reeves variable speed transmission. The company states that this branch office has been established from the standpoint of enabling them to give more complete service to customers and prospects, particularly in the textile industry.

:: :: ::

American Enka Releases New Dull Yarn.

The American Enka Corp., 371 Church St., New York, recently announced a dull synthetic yarn to the trade by the name of American Enka's Perlgle yarn. They state that upon examination it looks perfectly dull and is whiter than many other subdued yarns on the market, yet the yarn has an iridescence or glow that closely resembles the bloom of pure silk. It is stated that tests of the new yarn show it has an unusual high degree both of wet and dry strength, insuring satisfactory results in all kinds of processing, and that its dyeing qualities are also splendid.

PHILADELPHIA TEXTILE SCHOOL

PENNSYLVANIA MUSEUM OF ART

Forty-Eighth Year

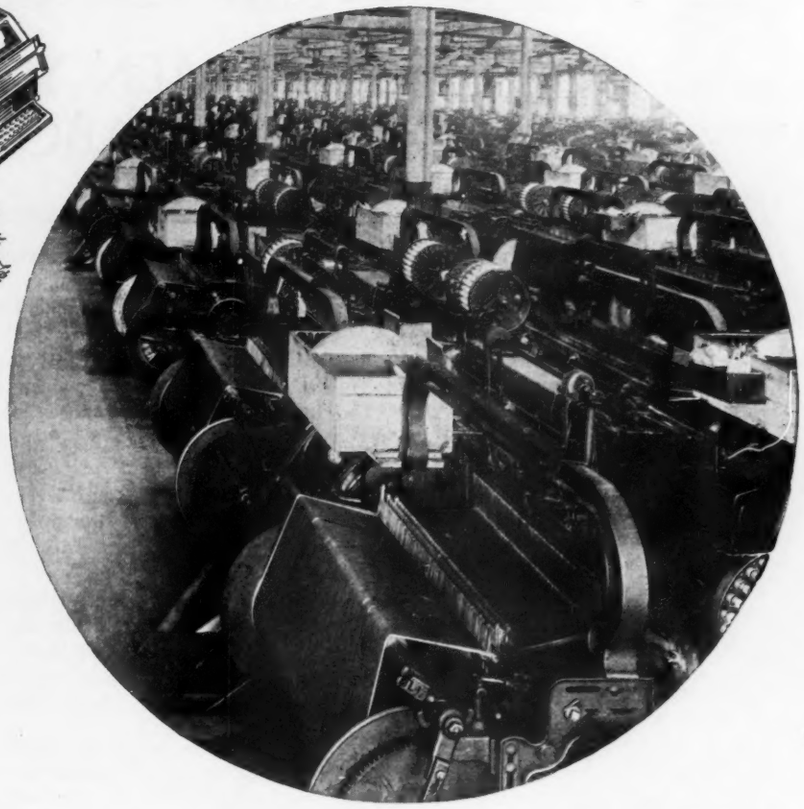
DAY CLASSES open September 16, 1931

EVENING CLASSES open October 5, 1931

Appreciation of the product of the school was shown by the unusually large demand for graduates of the year just closed.
Early registration is urged because of the advantage that comes to the students who start with the class on the opening day.
Courses of study embrace WOOL, WORSTED, COTTON, SILK and RAYON. Manufacture of yarns and fabrics. Color in design. Chemistry, Dyeing, Bleaching and Printing.
Circulars of the Day and Evening Classes may be had by applying to

E. W. FRANCE, Director

Broad and Pine Streets **Philadelphia, Pa.**



The weave shed of the White Oak Cotton Mills, Greensboro, N. C., the largest denim mill in the world.

FOR 8 YEARS TELETYPEWRITERS

HAVE HELPED THE CONE EXPORT & COMMISSION CO. BUILD AN ENVIABLE RECORD FOR CUSTOMER SERVICE

Concerns which give particular attention to speedy handling of orders and inquiries find Teletypewriter Service* one of their most useful aids. The Cone Export & Commission Company is able by this modern method to conduct its New York sales office and North Carolina mills as efficiently as though they were under one roof. An official says: "We are able to clean up in hours what would take days by any other method."

The service is of particular value to the sales force. For example: a customer queries the New York office regarding price and delivery dates on goods of a certain kind. The details are immediately transmitted to Greensboro by Teletypewriter. If necessary, telephone calls are made from the latter city to mills in other North Carolina towns. In the space of minutes all information is assembled and flashed to the New York office in typewritten form. The deal is closed. Another Teletypewriter message is sent to Greensboro, and production is started instantly!

Teletypewriters are also used in many other ways by The Cone Export & Commission Company. Credit information is exchanged. Manufacturing control centralized. Copies of important messages received at either office are instantly transmitted to the other. Administrative instructions, traffic matters, purchases . . . all are handled quickly and accurately.

Would this modern business tool be of equal value to *you*? Your local Bell Company will gladly give you complete information about it.

* * *

** A message typed on one Teletypewriter is reproduced at the same moment in identical typewritten form by all connected machines, whether 300 feet or 3000 miles apart. Teletypewriters can be operated by any one who can operate a typewriter.*

AMERICAN TELEPHONE & TELEGRAPH CO. AND ASSOCIATED COMPANIES — BELL SYSTEM

NOTES ABOUT MEN YOU KNOW OR KNOW ABOUT

Frank K. Billett, who for the past eight years has been head of the cost accounting department of the Toledo Scale Company, Toledo, Ohio, was recently appointed secretary of the company. Mr. Billett has been connected with the company for over ten years, having joined the organization in 1920 as enameling room clerk.

George Gordon Osborne, assistant professor of knitting and designing in the textile school of North Carolina State College, has been granted a year's leave of absence in order to pursue advanced work at Harvard University. He will be succeeded by **D. B. Hardin**, a graduate of the textile department of Texas A. & M. College, who has acted as teaching fellow in the State College Textile School for the past two years.

Arthur Emery has become associated with the Brookside Mills of Knoxville, Tenn., as agent. He succeeds W. W. Arnold, Jr., who recently resigned. Mr. Emery was formerly general manager and vice-president of the Aragon-Baldwin Cotton Mills, and more recently with the Griffin (Ga.) Mills.

Comer Turley, chief engineer of the Lindale (Ga.) division of the Pepperell Manufacturing Co., has been named master mechanic to succeed the late R. W. Van Tassell.

Edwin Howard has been appointed southern representative of the H. M. McCord Co., with offices at 1400 Woodside Bldg., Greenville, S. C. He was formerly connected with the Fales & Jenks Machine Co., Woonsocket Machine & Press Co., and Easton & Burnham Machine Co.

Allen Fuller has joined the A. E. Staley Mfg. Co., Decatur, Ill., as research chemist of the organization. Mr. Fuller was formerly with Bliss Fabyan Mills and the Swann Corp. He is a graduate of the Lowell Textile School.

Ralph M. Hoffman, for eight years manager of the Seattle office of the Pacific division of Link-Belt Company, has been appointed vice-president and sales manager of that division, with headquarters at San Francisco. He succeeds **Harold H. Clark**, who after 30 years of loyal service in the interest of Link-Belt Company, retired on June 1st.

James L. Herring was recently elected secretary and treasurer of the Alabama Braid Corp., Gadsden, Ala.

J. W. Curry, Jr., was recently appointed secretary and treasurer of the Lavonia Mfg. Co., Lavonia, Ga.

W. A. Cleveland has been made manager of Adams-Swirles Cotton Mills, Macon, Ga.

H. A. Murray is now superintendent of the Singleton Silk Mfg. Co., Augusta, Ga.

W. B. Shuford has been appointed assistant superintendent of the Highland Cordage Co., Hickory, N. C.

John S. Butler has been elected president of the St. Paul Cotton Mills, St. Paul, N. C.

Harry W. Blair has been appointed North Carolina representative for the Manhattan Rubber Manufacturing Division of Raybestos-Manhattan, Inc. He was formerly connected with the company. He is an experienced belting man, and will specialize in the Condor Textyl line of rubber products for the textile industry.

J. W. Roberts, who has been superintendent of weaving at the Gibson and Hobarton plants of the Cannon Mills, Kannapolis and Concord, N. C., for the past 12 years, recently resigned.

Carl C. Mattmann, Jr., has severed his connection as chief fabric technician of Industrial Rayon Corp., New York. He formerly held the same position with American Enka Corp.

T. G. Orr, of Bladenboro, N. C., is overseer of carding at the Borden Mfg. Co., Goldsboro, N. C.

Fred Caldwell is now section man in carding at the A. M. Smyre Mfg. Co. plant No. 2, Gastonia, N. C.

W. A. Case was recently made second hand in carding at the Hermitage Cotton Mills, Camden, S. C.

J. C. Tipton, formerly of Anderson, S. C., is now overseer of carding at the Abbeville (S. C.) Cotton Mills.

L. L. Hardin was recently promoted to the position of assistant treasurer and resident manager of the Hampton Spinning Mills, Clover, S. C. Previous to his promotion, Mr. Hardin was bookkeeper for the company.

Carl M. Moore has resigned as agent and assistant treasurer of West Boylston Manufacturing Co., Montgomery, Ala., and is succeeded by Joseph I. Gaskill, previously secretary of West Boylston Mfg. Co., Easthampton, Mass.

W. M. Colman has been made superintendent of the Silver-Knit Hosiery Mills, Kingsport, Tenn.

E. D. Melot is now superintendent of the Johnson Silk Mills, Inc., Lexington, N. C.

R. L. Sanford has been appointed superintendent of the Winfield, Ala., plant of the Alabama Mills, Inc., succeeding R. W. Hollis, who was transferred to a similar position at the Aliceville plant of the company.

OBITUARY

B. J. Dobbins, southern representative of The Kali Mfg. Co., died at his home in Charlotte, N. C., on June 23. He was one of the organizers of the Grace Cotton Mill Co., Rutherfordton, N. C., and during his career served as superintendent of the Henrietta Mills, Caroleen, N. C., Loray Mills and the Rex Spinning Co., Gastonia, N. C. At one time he was also connected with the Standard-Coosa-Thatcher Co., Chattanooga, Tenn.

D. C. Williams, superintendent of the Rockfish Mills at Hope Mills and Cumberland, N. C., died on June 18 as a result of injuries received in an automobile accident on June 13. Mr. Williams was returning from the annual meeting of the Southern Textile Association when his car was wrecked.

A. S. Cohen, one of the most prominent cotton experts in the South, died at his home in Marietta, Ga., on June 29. For many years Mr. Cohen was associated with the Inman cotton interests, serving in the capacity of an expert for the firm of Inman, Akers and Inman. During latter years of his life Mr. Cohen took a very active part in the development of technical and laboratory work at the Georgia School of Technology.

M. L. Smith, treasurer and general manager of the Hampton Spinning Mills, Clover, S. C., died suddenly at his home on June 14, at the age of 62.

BARBER-COLMAN
AUTOMATIC SPOOLERS

Sherbrooke Cotton Co., Ltd.,
Sherbrooke, P. Q., Canada.

Victor Monaghan Co.,
Monaghan Plant,
Greenville, S. C.

Manchester Cotton Mills,
Manchester, Ga.

Dominion Textile Co., Ltd.,
Magog Branch,
Magog, P. Q., Canada.

Victor Monaghan Co.,
Victor Plant,
Greer, S. C.

Limestone Mills,
Gaffney, S. C.

Drummondville Cotton Co., Ltd.,
Drummondville, P. Q., Canada.

Martha Mills,
Thomaston, Ga.

Dallas Manufacturing Co.,
Huntsville, Ala.

Brandon Mills,
Greenville, S. C.

and WARPERS

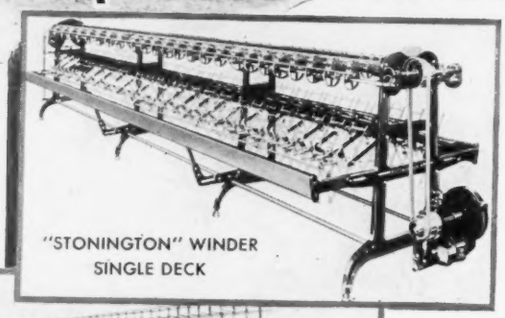
NOW in use in the above plants and in 103 other well-known cotton mills

BARBER-COLMAN COMPANY

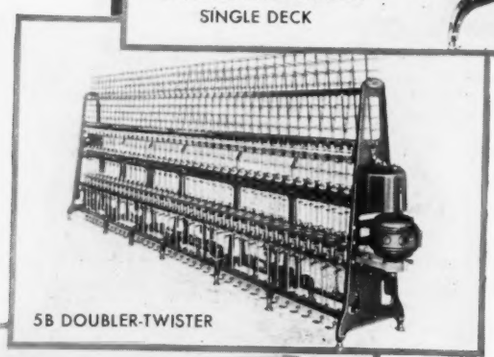
ROCKFORD, ILLINOIS : FRAMINGHAM, MASSACHUSETTS : GREENVILLE, SOUTH CAROLINA

Reduce your throwing costs!

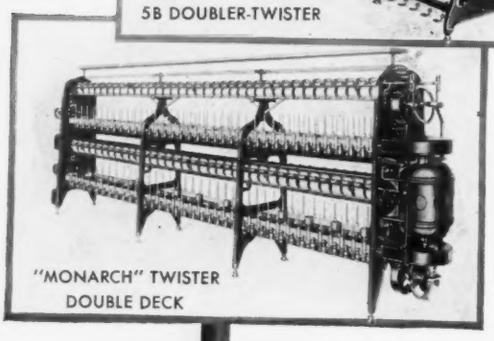
Replace obsolete machines with Modern ATWOODS



"STONINGTON" WINDER
SINGLE DECK



5B DOUBLER-TWISTER



"MONARCH" TWISTER
DOUBLE DECK

ATWOOD

IF you are still using old, obsolete throwing machinery, your throwing costs are high.

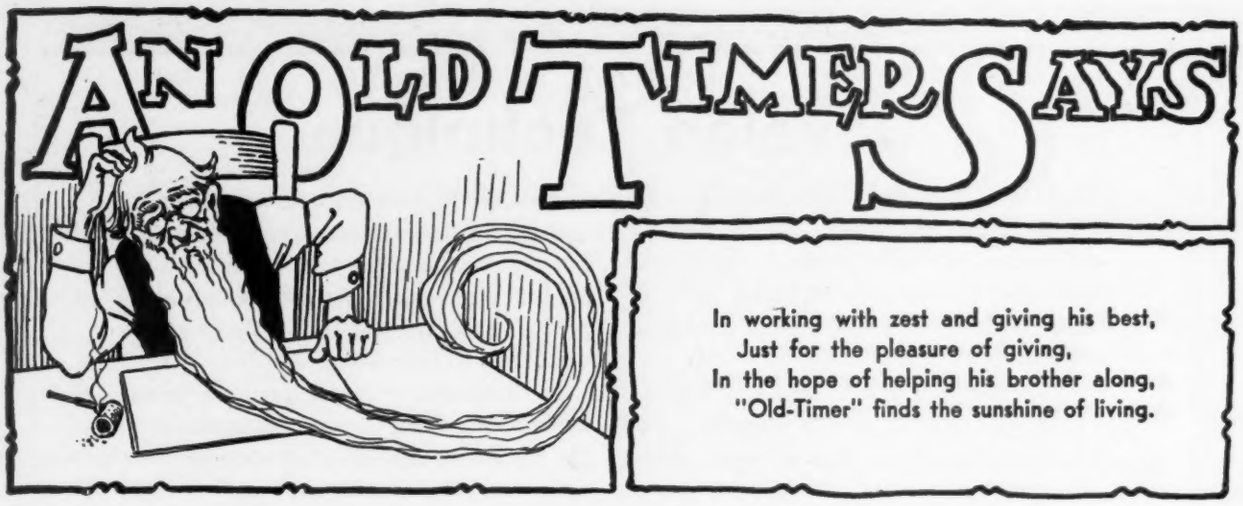
Modern Atwood machines will help reduce your throwing costs through more efficient operation, cleaner and better product, lower charges for power and repairs.

Atwood machines are dependable. They throw the bulk of the world's silk. They are the standard for silk and rayon.

Our sales engineers will gladly analyze your plant conditions and furnish allowance estimates. Ask for recommendations.

THE ATWOOD MACHINE COMPANY
FOUNDED 1852
STONINGTON, CONN.
General Sales Office: 267 FIFTH AVENUE, NEW YORK
Branches: Wilkes Barre, Pa. Stonington, Conn. Charlotte, N. C. Los Angeles, Calif.

1002


AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

Some More Random Thoughts

One of the hardest things for a human being to learn is that he usually does himself more harm than he does anyone else when he is "knocking".

* * *

"Too Late". Small words, but they have brought more grief, more disappointment to men than probably any other two words in the English language.

These two words are reflected in the scant pay envelopes of thousands upon thousands of men. How often do you hear them say: "He lost his opportunity, and now it's 'Too Late'." Yeah, Old-Timer has been hearing just such rot for many, many years and he is here to tell you that "Too Late" only applies to the man who is too darn lazy to overcome a missed opportunity. Any man who has got the backbone, the determination, and who will improve himself by a system of concentrated study and reading can overcome any "Too Late" opportunity he has ever had.

When one of Napoleon's generals said to him: "We will advance against the enemy when circumstances permit," Napoleon replied: "Don't wait for circumstances. Make them".

So Old-Timer has been preaching to you for years: Don't wait for opportunity—*Make it.*

* * *

There never was a time when so many "opportunities" were open in the textile business. The whole world is changing—changing its habits—changing its customs—changing its methods of business—changing its methods of work; and here we are, spinning about like we were 15 years ago, picking and carding about like we were 20 years ago—

Say! where are all you young fellows with all those new ideas anyway?

* * *

"In the sweat of thy face shalt thou eat bread" is a quotation from the Bible hundreds and hundreds of years old, but just as true today as then.

The trouble with the vast majority of men is they want something handed to them on a silver platter. If you expect to earn more salary than the other felllow you have got to make more money for your employer than the other fellow.

* * *

So many, yes in fact the majority of people are really selfish and don't realize it. If you don't help your brother overseer you are selfish—if you don't pass a good idea along to your fellow worker—you are selfish. A little piece of poetry by Ella Wheeler Wilcox winds up by saying:

"For love brings love and hate brings hate."

If you help others, they will help you. Just try helping some fellow along and see how much genuine pleasure you get out of it.

* * *

Study and Work.

The two things which will surely bring promotion and more salary.

* * *

The world—the textile business is moving forward. Are you?

* * *

Opportunities are not rare—they are all around you, but it takes an active brain to see them. You have got brains; how about working them a little overtime?

* * *

Gosh! This is some depression the world is going through, isn't it? How old are you? Have you ever seen a depression before? Remember when we had to use "scrip"? Couldn't get any cash from the bank. Of course you remember the "Buy a Bale of Cotton" slump. Well, we have had some pretty good times since that, haven't we? And unless history does not repeat itself we are going to come out of this depression sometime. Had you ever noticed how people are affected in a business way at times of depression and also at boom times? For example: When depression comes everybody stops selling because prices are so low—when a boom is on everybody buys because they feel it's going still higher. To illustrate—You bought a house in 1928 for $5,000.00. Now if a man offers you $2,500.00 you will not sell because you figure you lose 50 per cent. But you do not stop to think that you could take the $2,500.00 and buy just as much good stocks or commodities with it as you could have bought with $5,000.00 in 1928.

In fact, you could make just as good profit trading when values are off 50 per cent as you could when values are up 50 per cent. Ever think about it that way?

* * *

A door stood half closed. One man looked at it and said—"The door is half closed. I am afraid to try to go in."

The other man said—"The door is half open. That's my opportunity. I AM GOING IN."

* * *

When you think of a good idea, go to work on it like you would build a house. Reason it out from every angle—lay your plans conservatively—then keep persistently at it until you put it across.

You will then find a lot of other fellows who thought of the same idea.

But they only *thought* of it.

Develop Technique

TECHNIQUE is that skilled and refined procedure which harmonizes mind with method and motion. Business that has it, individuals that have it—accomplish more, and do better work with less effort, less time and less waste.

Just as much depends on technique in business as in art or sport. Not long ago Business shied at using a term, or a practice, which had anything to do with Art, or even Sport.

Not so now. Modern Accountancy has shown not only that business management *is an art,* but that its greater success comes with the application of exactly the same factors which produce great Art—and make Sport so universal and so interesting.

In the control of your business, in the method or system of your management, in the endless operations of all material functions—*develop technique.*

Ernst & Ernst have endeavored to set forth much of the *technique* of management in "Budget Control," a 40-page booklet which will be mailed by nearest office on request.

ERNST & ERNST

ACCOUNTANTS AND AUDITORS—SYSTEM SERVICE

AKRON, ATLANTA, BALTIMORE, BIRMINGHAM, BOSTON, BUFFALO, CANTON, CHICAGO, CINCINNATI, CLEVELAND, COLUMBUS, DALLAS, DAVENPORT, DAYTON, DENVER, DETROIT, ERIE, FORT WAYNE, FORT WORTH, GRAND RAPIDS, HARTFORD, HOUSTON, HUNTINGTON, W.VA., INDIANAPOLIS, JACKSON, MISS., KALAMAZOO, KANSAS CITY, LOS ANGELES, LOUISVILLE, MEMPHIS, MIAMI, MILWAUKEE, MINNEAPOLIS, NEW ORLEANS, NEW YORK, OMAHA, PHILADELPHIA, PITTSBURGH, PORTLAND, ME., PROVIDENCE, READING, RICHMOND, ROCHESTER, ST. LOUIS, ST. PAUL, SAN ANTONIO, SAN FRANCISCO, SEATTLE, TAMPA, TOLEDO, TULSA, WASHINGTON, WHEELING, WINSTON-SALEM, YOUNGSTOWN

CLINTON STARCHES

FOR ALL TEXTILE PURPOSES

Manufactured by

CLINTON CORN SYRUP REFINING COMPANY

CLINTON, IOWA

QUALITY SERVICE

BARBER-COLMAN

AUTOMATIC SPOOLERS

HIGH SPEED WARPERS

WARP TYING MACHINES

WARP DRAWING MACHINES

HAND KNOTTERS

BARBER-COLMAN COMPANY

General Offices and Plant

Framingham, Mass. ROCKFORD, ILL., U. S. A. Greenville, S. C.

FOR SALE

Roll Covering Plant

Fully Equipped with Modern Machinery

Location, Atlanta, Georgia.

EDWARD H. BEST & COMPANY

222 PURCHASE STREET

BOSTON, MASS.

HOW OTHER MEN MANAGE

Practical Discussions by Cotton's Readers On all varieties of Mill Subjects

Do You Really Know Your Job?

Read this, and then ask yourself whether or not you know your job?

EDITOR COTTON:

It may seem to be a foolish question to ask a second hand, an overseer or a superintendent if he really knows his job. But I have become convinced that, relatively speaking, a man knows less about his job than he sometimes thinks he does. Isn't it the little things that often cause one the most worry? And is it not true that we sometimes look on the little things as unimportant?

The Superintendent of the Blank Mills, making heavy duck for the mechanical rubber trades, was sitting in his office one day in November reading the football results, when the telephone rang. He dropped his paper and grabbed the phone, thinking, of course, that it was the "boss" calling. "Hold the wire for long distance," said the operator, sweetly. The connection was made in a jiffy. "This is Salesman No. 13 of your selling house speaking," called the voice at the other end of the line, "I am at the office of the purchasing agent of the X Rubber Co., in Ohio, and I have just learned that they are planning to make some experiments with some 600-yard rolls of belting duck. These will be 45 inches in diameter. Are your weavers' alleys of sufficient width to make these rolls?"

"Well, er—, I, er, you see I will have to check up, as I do not have the exact information at hand," replied the super.

"Sorry, but I will not have time to wait, as I am next in line," said the salesman. "Guess we will just have to forget about this order."

Now if you had been the superintendent of the plant could you have told the salesman off-handed the width of your loom alleys, or given him other similar information quickly? If you could not, then you cannot claim to know all about your job.

Mr. Overseer, do you know what your help makes per week and per hour? You say you know *about* what they make. You should know *exactly*. Have your timekeeper figure this information for you about once a month and maybe your eyes will be opened. In my own department such a report has revealed rates that needed adjustment. Some rates were too high, others were too low.

Do you know just exactly what each hand in your department is supposed to do? You think you do, but let me cite one case that actually happened. A new assistant superintendent, whose training had been mostly in the office, asked that each foreman get up a complete list of his help with the duties of each. Some of the men had their second hands prepare this information, because they were more familiar with the details of each job. But a few of the overseers undertook to get up the list without assistance, and one would be surprised how incomplete some of the lists were. But you say that an overseer should know all about his job, and of course will know what his help does. If this were true there would be no need for this article.

What do you know about your supply bills and cost figures? How does your waste this year compare with last year? If your costs were more last month than they were the month before do you know why? If your office does not already furnish you with these figures, I feel sure that a simple request will make them available for comparison.

What about your bad work? Many men who would otherwise be good mill men look upon bad work as rather a trivial matter. Indeed looking after bad work is one of the most important things that an overseer and a second hand has to do. An overseer cannot say that he knows all about his job unless he checks up daily on the bad work made by his department. He should also know about the bad work that is being sent back to the department behind him to be sure that nothing goes back that there is any question about.

One superintendent has what he calls a machine book, with a page for every machine in the mill. Complete information is carried such as, date machine bought or installed, maker, model, gauge, horsepower required, etc., etc. Spaces are provided for entering dates of inspection. Any improvements to the machine are noted, for example, cork rollers installed on a speeder, ball bearings put on twisters, a pressure oiling system installed on a certain loom. In order to keep this book up-to-date this man requires the foreman of each department to turn over to him weekly a report of all machines inspected and of any improvements as noted above. It would not be amiss for each overseer to keep in his office a similar book, for a record of his machines. Such a

WE invite our readers to make use of this department for the discussion of any and all problems arising in the mill or the finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statements of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

system will do much toward making one more familiar with his job.

It is not the purpose of the writer, in this short article, to enumerate all of the things that various overseers and second hands should know about their jobs, but the object of the article is to make you stop and *think*, and if you do not really know your job, to cause you to get busy and study it and learn more about it. Then perhaps it will inspire some good writer to get up a much better paper on the subject than I have been able to prepare. If these things are accomplished I will feel well repaid for the little effort that I have put into this.

CONTRIBUTOR NO. 4022.

More Discussion of Leather Top Rolls.

These men give their opinions as to which way the lap should point. How about yours?

EDITOR COTTON:

I was very interested in the discussion of which way the lap should point on leather top rolls in a spinning frame, which was submitted by "L. W. N. (N. C.)" in the October, 1930, issue. I would like to express myself on this subject.

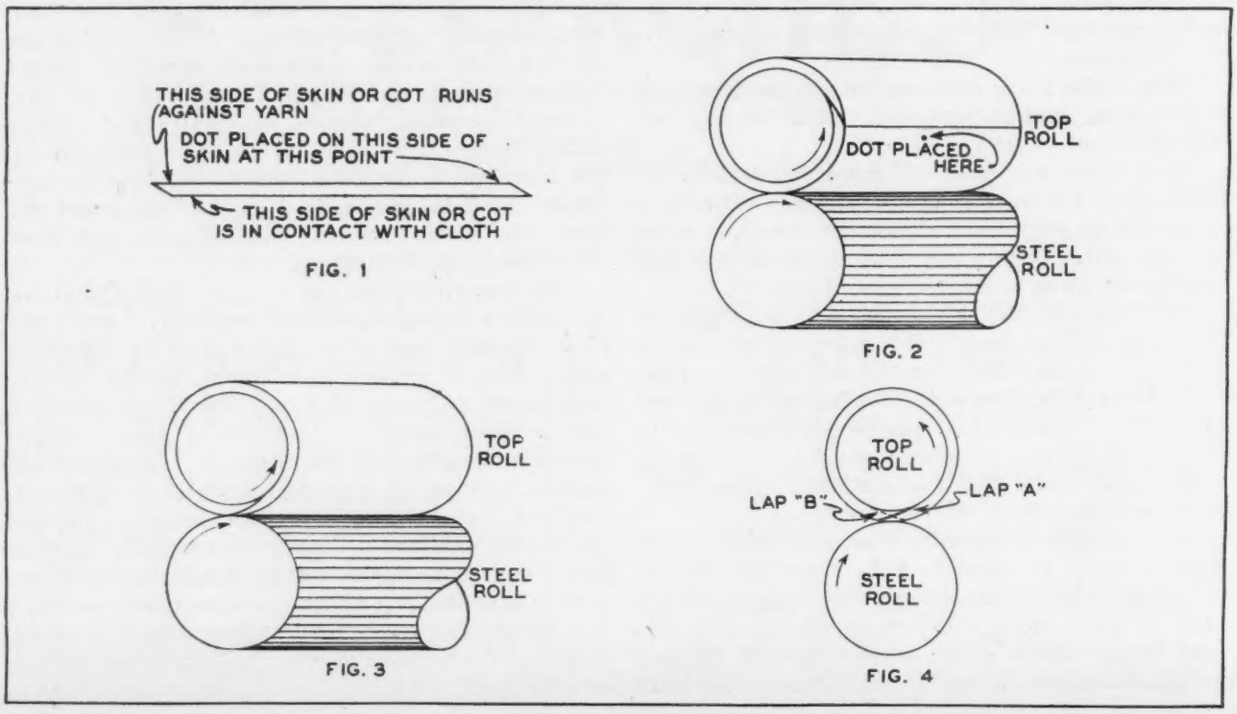
Leather top rolls should be put into a frame with the point or overlapping of the lap pointing towards the front when the lap is on top. Fig. 1 represents a cot previous to being cemented and is a side view of same showing the beveled edges that are cemented together to form the closed cot that is forced onto the roll which is covered with cloth glued onto the roll proper. The usual practice of roll coverers is to put a dot, letter, or some type of marking on the outside of cot as shown in this sketch just before the bevel. As the roll when placed in the frame is supposed to be placed with this dot or marking to the front or between the person placing roll in frame and the lap on the roll, this means that the overlapping of lap points towards the front.

Fig. 2 corresponds to Fig. 1, as presented by "L. W. N. (N. C.)." This sketch illustrates the direction of rotation of top leather roll and bottom steel roll, also shows the direction of joint of the lap, the dot or marking on cot. It will be noticed that this dot or marking is placed, as already mentioned, to the front when putting in the roll, or between the operative and the lap. Another important point to note in connection with this diagram is that as the top roll turns, the overlapping runs with the roll and in this way, if this overlapping of joint is slightly roughened up, it will not cut the yarn, for it runs in the same direction as the yarn and not against the yarn as it passes through the roller. "L. W. N." states this by saying that the roll turns away from the point of the lap.

Fig. 3 illustrates what "L. W. N." has stated. That is, if the roll is put in as shown by Fig. 2, there seems to be a tendency on the part of the steel roll driving to top leather roll to continually raise the point of the lap. This seems to be true considering the direction of lap, direction of rotation of top and bottom rolls. However, if one will put rolls in a frame with laps pointing in opposite directions, I think that it will be found that the majority would prefer putting the rolls in with the lap pointing as shown in Fig. 2. If placed in the frame with the overlapping of joint pointing towards the back there is a tendency if roughened up for the joint to cut the yarn passing through the rollers, thus causing more end breakage.

I think the best solution is to put in a few rolls with the laps pointing in opposite directions and note the results. Note which cause the highest end breakage and which tend to roughen up the lap the most.

Fig. 4 illustrates what "L. W. N." and I have stated to be general practice, a tendency on the part of the



steel roll to raise the heavy line or lap, shown by *A*. Yet, from the yarn standpoint, overlapping in this direction is better. The dotted line, or Lap B, indicates the overlapping if put into the frame in the opposite direction. Which is right? What is your opinion and why?

CONTRIBUTOR NO. 4958.

Criticizes Recommendations for Twisting Fine Plied Yarns.

Also gives some new ideas for use in twisting. Your ideas on the subject are invited.

EDITOR COTTON:

In the article on "The Twisting of Fine Plied Yarns", by R. A. Soniaman, which appeared on page 744 of the June issue of COTTON, I find a number of errors of omission and a few of commission which should not pass unchallenged. The article does not give an accurate description of the practices employed in the more progressive mills in their fine twisting departments, according to my experience and observation.

Mr. Soniaman's recommendations referred to a twister room to handle 40s, 50s, 60s and 70s two-ply. As to the ring size to be used, which it the first point on which I disagree with him, he wrote as follows:

> "The ring size which would ordinarily take care of these counts properly is 1¾ inches, but it would be well to have several frames with ring sizes somewhat larger and smaller than the foregoing dimension in order to safeguard the firm should there be a change from the counts mentioned to a wider range, finer or coarser, or both. Let it, therefore, be assumed that 35 frames shall be 1¾-inch rings, 10 to be 2-inch rings, and 5 to be 1½-inch rings. * * * For the sake of simplicity again, the 40s will be considered as being twisted on the 2-inch ring frames, the 50s and 60s on the 1¾-inch and the 70s on the 1½-inch rings. * * * "

When it is known that several fine yarn mills are twisting 120s/2 and 140s/2 on 1¾-inch x ⅜-inch bands, and getting good production and fine running work with spindle speeds as high as, and in some cases higher than catalog speeds, it is evident that the necessity for having some frames equipped with 1½-inch rings for twisting 70s is obviated. In order to allow for 120s and 140s being spun from 1¼-inch and 1 5/16-inch cotton respectively (which is being done, believe it or not), the writer would recommend 1 5/8-inch rings for twisting these numbers in two-ply, and if the gauge of the frame were close and the bobbin barrel of small diameter, a 1½-inch ring would be preferable. But that such fine yarns are being twisted successfully in two-ply on 1¾-inch bands is not hearsay but fact. That the long-running doffs of these fine numbers can become soiled by staying on the spindle too long where the larger ring is used is obvious, but this trouble can be avoided by using a reverse warp wind, as shown in Fig. 1.

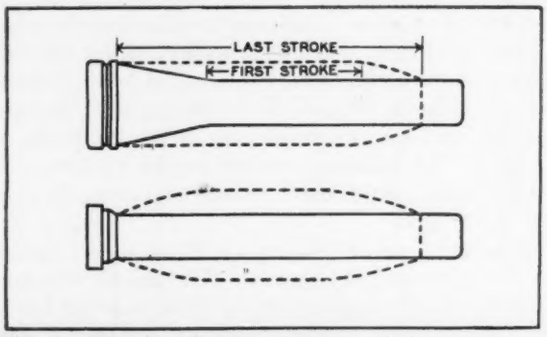


Fig. 1. Showing the reverse warp wind . . .

The reverse warp wind is just what the name implies: a warp wind inverted. The first layer of yarn on the bobbin, and thus the first stroke of the traverse after doffing, is the shortest one, and the last layer or stroke is the longest. The bobbin on the top, Fig. 1, has a cone-shaped base so that the yarn will form a straight side package. This is essential, even necessary, where the reverse warp wind is used in spinning, for the single yarn will not wind off satisfactorily where a straight barrel warp bobbin is used (bobbin on bottom, Fig. 1) due to the friction in pulling around the taper at the bottom, as the yarn must be wound or spooled over-end from the reverse wound package. However, ply yarns can be wound satisfactorily from a straight barrel warp bobbin, their strength enabling them to pull around the shoulder formed by the taper without breakage.

In addition to the advantage mentioned, that of preventing fuzzy, smoky yarn caused by long running doffs, which is accomplished by each new layer of yarn covering up the package already formed, this wind has the advantage of eliminating a good deal of sloughing of the yarn in reeling or winding. Since a short taper can be used because each layer of yarn binds down the previous layers, it is evident some increased yardage can be obtained over the use of regular warp, combination, and filling winds.

The best way to accomplish this reverse warp wind is to use a reverse builder worm and builder rack made to suit. The rack will then run in just the opposite direction from the one it takes in forming a regular warp wound package. The reverse wind has been used by simply taking off the ratchet gear, or "pick wheel", and turning it around so as to throw the teeth in the opposite direction, then putting the pawl on the other side from the one originally installed. In both cases the builder rack is wound in when the frame is doffed, and then runs out as the package fills up.

The next point on which I should like to correct Mr. Soniaman's article, according to up-to-date practice in twisting fine yarns as I know it, is his recommendation on the question of whether to put spools or tubes of yarn in the creels of the twisters. He says that this "can be readily disposed of in favor of the tubes on account of the larger and better built package possible with the tubes." This statement, I believe, is an error of commission on Mr. Soniaman's part. Among the progressive fine yarn mills I know, twisting from tubes has just about been abandoned. In his table of details published with his article, Mr. Soniaman gives the yardage of 40s on the tube as 36,000

yards. This is doubled yarn, that is, wound two ends up. A 4x5 inch spool, barrel diameter 1¾-inch, holds 39,000 yards of 40s—one end up, of course—when a Foster No. 32 tension is used, and the elasticity is not taken out of the yarn in spooling. The spool is built in barrel shape.

I believe that winding is more severe on the yarn than spooling, because the package on the winder is revolved by frictional contact with the roll and chafing results. This is strikingly evidenced by the lint that collects in a high-speed warper creel of wound packages. Winding, according to my experience, is more expensive than spooling, and doubling is even more expensive than winding. Any tubes not run out entirely in the creel must either be saved or creeled in as pieces, or re-wound; new yarn cannot be wound on top of the old because of the variation in the setting of the doubler spindles. Spools can be filled up with new yarn at any time.

One fine spinner I know winds his yarn one end up on cones, then winds two ends up on tubes from the cones. He does this to eliminate two-ply knots in the doubling process, which occur frequently when the yarn is doubled direct from the spinning bobbins. His reason for using tubes in his twister creels is that the 140s, two ends up can revolve the supply package with less strain on the individual strands. This idea is not altogether correct, for by using a spool of correct dimensions, a single end of 140s will revolve it without undue strain. For such fine numbers, spools used in twister creels should be about 3½x3 inches, with a barrel of at least 1¾-inch. The reason why a spool of this type is preferable to a smaller diameter and longer spool is that of increased leverage which is a great help to the fine strand in turning the spool. Also when the bushings or bearings of the spool are close together there is less twisting and binding of the spool on the creel spindle than is the case where the bearings are far apart.

Now, Mr. Soniaman further states that "The cheeses [tubes] should be two-ply as this method simplifies creeling, and eliminates the possibility of single, a fault that would be more or less prevalent where two single end tubes run to one spindle bobbin."

This idea of using tubes with two ends up to eliminate single in the twisted yarn is erroneous. In ordinary twisting, the twister spindle runs in the opposite direction from the spinning spindle, so that if one end breaks in the creel, the twist is taken out of the remaining single strand and it breaks immediately. Should almost no twist be put in the ply yarn, the spindle running at very low speed and an unusually light traveler used for the yarn number, it is conceivable that single might be run in two-ply twisting. Or if "twist-on-twist" were being run, that is, with the twister spindle running in the same direction as the spinning spindle, a single might be run in two-ply twisting. But in common, everyday twisting operations, single is never run in two-ply twisting.

When all the run down spools are removed from the twister creel, the frame should be cleaned all over, from top of the creel to the floor, troughs and rails included. Then the frame should be creeled, not "pieced-in", with full spools. The center boards should be wiped out once or twice daily, the cap bars, yarn traverse guides, thread guides, etc., brushed off twice daily while the frame is being doffed. These cleaning items are mentioned as being radically different from those advanced by Mr. Soniaman, who said that "Some of the cleaning, such as the creels and center boards, can be done twice a week, top rolls, cap bars, guide wires, top of troughs, and so on, once a week, etc."

A comparatively recent development in fine yarn twisting, which I wish to contribute to the discussion of the subject, is the use of 1½-inch rather than 1-inch diameter water rolls. This change is illustrated in Fig. 2. The larger rolls have the advantage of being more easily revolved by the yarn because they

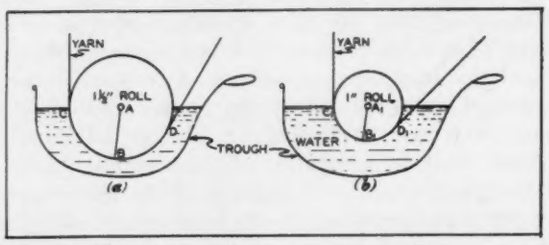


Fig. 2. Illustrating the larger water roll . . .

are more bouyant and because of the greater leverage, A—B in the larger roll over A_1—B_1 in the smaller roll. Furthermore, the yarn has longer contact with the larger roll from C to D than from C_1 to D_1, and the wetting is more effectively accomplished. Also, the angle of the yarn around the larger roll is not as sharp and therefore not as severe on the yarn as where the smaller roll is used.

Another good idea is that of having the porcelain thread guides with the back of the eye made square, instead of round. This is illustrated in Fig. 3. A guide with a square-back eye allows the thread to play back

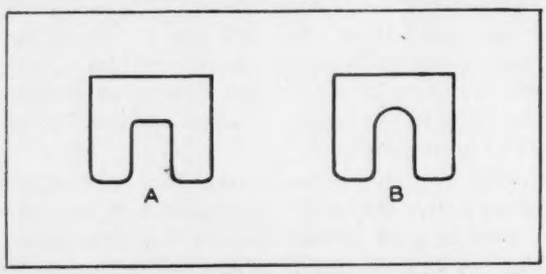


Fig. 3. A: square-back guide; B: round-back guide.

and forth and not cut a groove at one place in the guide, which causes frequent breakage of ends, as invariably happens within a year or so where round-back guides are used.

Twister overseers changing to ever-finer numbers had better keep an eye on the weight of the top rolls. Recently a superintendent experienced lots of trouble with cut ends on twisters in a mill equipped for spinning 40s and then changed onto 100s. He found the trouble in the excessive weight of the top rolls, and had to remove considerable stock by boring to eliminate the trouble.

Recently I saw a tire cord mill with a stroborama for checking spindle speeds. This check was made twice daily, and lagging spindles were marked for immediate attention. It was found that about two weeks were required for a new tape to get sufficiently "brok-

en in" to hug the spindle as it should, and get the spindle up to the speed attained by an old tape in good condition. Treated tapes are now being bought so that a new tape will give the correct spindle speed when first put on. If such care be necessary in twisting tire cord it is just as necessary in fine yarn twisting.

More thoughts and ideas on fine yarn twisting will help, for the subject has by no means been covered. Let's have the thoughts and experiences of other readers.

CONTRIBUTOR NO. 5061.

Handling High Density Cotton.

A discussion of the three common types of bales—flat, standard compressed, and high density.

EDITOR COTTON:

I have read with interest the various discussions that came up in the discussion meeting of the Carding Division of the Southern Textile Association, recently held in Anderson, S. C., and reported in the May issue of COTTON.

The discussion that appealed to me above all others was that concerning high density bales. Because it was the opinion of many of those present that they had had no trouble with this type of cotton bale, and because some stated they used compressed air to aid in the opening of the cotton, I am tempted to ask the question: Do my good brothers know what high density cotton really is?

There are three common types of cotton bales: (1) flat; (2) standard compressed; (3) high density.

The flat bale is the form in which cotton is put up at the country gin. It weighs from 400 to 500 pounds, has six ties or bands, and has a density ranging from 12 to 15 pounds per cubic foot.

The standard compressed bale is the form in which the bales are put up for railroad transportation. This type of bale is made by applying great pressure to the ordinary flat bale. It is pressed only on the top and bottom, the cotton being allowed to spread both sidewise and end-wise. This bale generally has eight ties, is very irregular in shape, and has a density of 22 to 28 pounds per cubic foot.

The high density bale is the form in which cotton is put for export purposes, and down in Louisiana many of these bales may be seen on account of the saving realized in storage space. This type of bale is made by applying great pressure to all sides of either the flat or compressed bale. Pressure, however, is not applied to the ends. This type bale, commonly called the H D bale down around New Orleans, has nine or ten ties, is very regular in shape, and has a density of 28 to 40 pounds per cubic foot.

There is also a type of bale known as the round bale, which is made by winding a sheet of cotton in the form of a lap, but this type of bale is seldom used in this country.

Now, getting back to high density bales and the difficulty encountered in the use of them, as brought up in the discussion in Anderson. I have used all three; flat, compressed and high density—each in a mix alone; then at times I have had to put down mixes with some of each. I have always had extra work and trouble, besides extra expense, with the high density bales. After considerable experience with this type of cotton, though, we think we have learned how to use it.

When the bales are received, all of the ties except the two end hoops are cut and the bales allowed to stand on their ends, thus allowing them to expand. After 24 hours or more these bales are opened and layers taken off in 6-inch slabs and stacked in piles about four feet high. This allows the cotton to again expand and regain its original condition.

After standing another night, the cotton is ready to be broken up into small pieces or tufts, after which it is again piled up and allowed to air out over night before feeding it into our bale breakers and tandem verticals.

There may be better ways of handling high density bales of cotton than we are using. If there are, I surely would like to learn of them. The idea of accomplishing results by the use of compressed air, however, sounds out of line with our experience.

CONTRIBUTOR NO. 5051.

Checking Up on Orders.

"J. R. (Ga.)" offers some very interesting discussion concerning checking up on orders given.

EDITOR COTTON:

My discussion in the February issue seems to have aroused a bit of thought, as it brought in two very commendable contributions. I have reference to those of "CONTRIBUTOR NO. 4022" and "JACK (TEXAS)", appearing in the April and May issues, respectively. I wish to thank these two men for their criticism of my article "The Attitude of the Second Hand", which appeared on page 365 of the February issue, as I am always open to constructive criticism.

Then too, "CONTRIBUTOR NO. 4022" has clarified several points that he and myself presented very briefly in our original articles. However, it seems that both contributors in commenting upon my article have taken it for granted that I am trying to substitute "never check up on orders issued" for the statement made by "CONTRIBUTOR NO. 4022" in his first article, "never take anything for granted."

By referring to my article in the February issue, it will be found that I made the following statements: "True it is that a second hand should check up on the orders that he gives, and in doing this he should be optimistic and firm and not a contentious "belly-acher". Backing one's judgment is vitally essential, but in doing this all matters pertaining to the mill or departmental operation should be considered. It is better to be a judge than a politician while trying to hold down a position as second hand or overseer." I still think this is just as true as ever.

In regard to checking up on orders, I will cite the experience of an overseer I know. It was announced that the bad work of the card room, such as singles, doubles, slugs, tangled bobbins, gouts, etc., whenever found in the spinning room be itemized and the itemized list and stock returned to the card room, this list to be signed by the second hand of the spinning de-

partment. The second hand would gather this work together and at intervals would wait two or three days between times of returning the work and making the report. Then when the bad work was reported and posted on the frame hand's chart, the chart looked terrible. The superintendent began to pay attention to this chart and inquired of the section man, who was a real good one, whether or not bad work was being returned daily. His answer was, no, which was also the reply he gave the card room overseer upon being questioned.

This caused the superintendent to issue an order to the spinning overseer to require his second hand to return the bad work daily at a certain hour. This seemed to "rub the fur the wrong way" for the spinning second hand. He blew up, and in an effort to relieve himself of any of the responsibility, he went to the card room second hand and requested him to make a note on an order that this had been done in the past. The second hand thoughtlessly made this notation, and then the spinning second hand jumped the section man about making a verbal report to the superintendent, and tried to bawl him out. The section man repudiated him, and went for the carding second hand to find out why he had signed the order without first investigating it. It so happened that the section man had been thoughtful enough to preserve the reports, which enabled him to prove that he had reported the truth when he told the superintendent and overseer of carding that the bad work and reports were not being returned to the card room daily.

I certainly agree with "JACK (TEXAS)" when he says a man should use discretion in bawling another out. It always pays to have respect for the other man's feelings.

I once knew a superintendent who accepted a position with a mill and in less than 90 days had, with the exception of one, made a complete change of overseers. Well, this superintendent lasted for about a year on the job and at the present time is out of a job. The chances are he will be out for sometime.

I know of another instance where a section man had a lot of travelers to change. He used two men an hour each day to do the work, and when he made the report to the timekeeper, the timekeeper wanted to know the number of frames the men changed, what they were changed to, etc. This seemed to wound the pride of the section man, so he enquired how long it was necessary for a man to work with the company before he could be trusted. I think that is the case with many department heads. They never show any confidence in the men in their department. Understand, however, that I do not wish to impress upon anyone that I think a department head should take everything for granted.

I was very much impressed with the illustration "JACK (TEXAS)" used of the shipping clerk who by careful study and consistent suggestions saved his company more than his annual salary in a period of 24 hours, and also, by means of co-operation, curbed the spending of sixty cents to get a dime's worth of work done.

As suggested by "CONTRIBUTOR NO. 4022", I think that when a check up is made of any orders given, it should be done in a quiet systematic way. Then, when it is necessary to reprimand a person for failing to carry out orders, this should be done in a very diplomatic manner.

J. R. (Ga.).

Doffer Comb Speeds.

Do you agree with these men as to the correct speeds for doffers?

EDITOR COTTON:

I noted with a great deal of interest the question by "CONTRIBUTOR NO. 4943" in a recent issue of COTTON pertaining to doffer comb speeds, for we have had both pleasant and unpleasant experiences along this line. He said, "In former years it was quite customary to have the doffers on cards running about 14 r.p.m. The doffer comb or comb box was always run fast enough to comb the web from the doffer at this high speed. Now it is a common thing to see doffer speeds down as low as 6 and sometimes 5 r.p.m. Still the comb boxes are going at the same speed as when we were running the doffer at 15 r.p.m."

He stated that he has always had trouble with his comb boxes throwing oil, and asked if it would not prevent this if he would slow his comb box speeds down, and if it would not have a tendency to prevent a lot of wear and tear on the box. So far as his comb boxes throwing oil is concerned, this might be prevented if he cuts his speeds down, but the remedy should be something else. The machinery builders made the boxes to run satisfactorily at the speeds they advocate, and if the boxes are properly taken care of, and oiling is properly done, there should be no trouble so far as oil being thrown by them is concerned. I believe that we are often fooled about the boxes throwing oil. Many times the oiler will run a box over, and several days later we pass and see oil beneath the box and jump at the conclusion that the box is leaking or has been throwing oil.

I do believe that the slow speed will save enough wear on the box to warrant using the slow speed, provided it can be used satisfactorily. I believe that the speed that can be satisfactorily used for the doffer combs is largely governed by the weight sliver being run. It has been our experience that as long as we have a rather heavy web, most any speed of the doffer comb will take it from the doffer, but if we have a rather light web, then we have another story.

If a slow speed is used when a light weight sliver is being made, I believe it will be found that there will be quite a few holes in the web. It is naturally harder to take a light web from the doffer.

I would like to see some more discussion of this subject.

CONTRIBUTOR NO. 4999.

EDITOR COTTON:

I considered the question by "CONTRIBUTOR NO. 4943" in a recent issue on doffer comb speeds one worthy of much consideration. I have often wondered why it was that so many are still running their doffer combs at the same speed they were when they were running their doffers from 12 to 16 r.p.m., rather

than from 6 to 9 r.p.m., as so many now run them.

On the cards we have when we desire to slow down the speed of the doffer comb it is only necessary tc slide the belt driving the doffer comb onto a small r pulley, so when we slowed down our doffers we did not hesitate to slow down the doffer comb speeds accordingly.

We were using a 46-pound lap and decided that we would card a 42-pound one instead. With the 46-pound lap we were producing a 53-grain sliver. then when we started carding the 42 pound lap, the sliver made was 45 grains in weight per yard. We next reduced our doffer speed from 11 r.p.m. to 8¼ r.p.m. Our next thought was as to the results we would obtain by reducing the doffer comb speed. We cut this down considerably, and I am sure that we were getting just as good a sliver as we were getting at the higher speed.

Some feel that a sacrifice will be made as to the small amount of cleaning the doffer comb does if the speed is reduced. The doffer comb, of course, knocks out a small amount of trash, etc., from the web, but this amount is so small as to be practically negligible.

While I am on the subject of cards, I would like to tell of one thing I so often see neglected when cards are being stripped. I don't know how many I have seen who fail to remove the small amount of dirt and trash that is knocked out by the doffer comb onto the pan beneath the web when they strip the cards. The amount that is collected here is generally very small, but if it is not removed it can very easily cause trouble later on, and it is such an easy matter to remove this trash.

CONTRIBUTOR NO. 4998.

Preparing Raw Stock for Dyeing.

Another practical comment on the questions of a colored goods man about using soda ash, boiling-out, etc.

EDITOR COTTON:

"We would like to have some practical discussion in your magazine as to just what is the best method for preparing cotton for dyeing in a Chattanooga vacuum raw stock machine, especially when dyeing sulphur colors." This was the request made by "CONTRIBUTOR No. 4914" in the January issue of COTTON.

The problem of dyeing cotton raw stock with any colors, but particularly with sulphur colors, is to conserve as far as possible the natural properties of the cotton fiber, so as to insure good spinning and to produce dyeings which are as level as can be made.

Cotton raw stock is usually boiled-off before dyeing. However, there is no special merit or gain to be obtained from the boiling-off process, considered for itself alone, were it not for the fact that such an initial wetting-out process does assist in leveling the subsequent dyeing. The cotton itself is not improved by a boiling-out process; rather the opposite in fact, and the least or lightest effective treatment that we can use and still produce commercial goods is the correct thing to do.

The term "boil-off," which is the same term as is used by silk dyers when referring to their wetting-out process is, as far as cotton is concerned, a misleading one; to boil silk off suitably for dyeing a considerable percentage of the raw material must be removed. The operation for silk is a true boiling-off process, but with cotton there is no need to remove any of its chemical components before being able to dye it economically and conveniently. Many of us used to feel that to properly prepare cotton for dyeing it was necessary to go after the fats and waxes with a heavily loaded chemical shot gun, and we used to use for this amiable purpose powerful alkalies and chemical strong enough to raise blisters on case-hardened steel, without being in the least any the less free from harsh cotton and uneven dyeing.

There would not really be any need for an initial boiling-out process at all if we could depend on our dyestuffs to show some sense and go to the proper places and do the things we want them to do, but we all know that dyestuffs are a good deal like mules and have to be humored. Therefore, it is necessary to wet out the cotton thoroughly, but it is not in the least necessary to do anything more than wet it out. Nothing that was inherently a part of the cotton fiber needs to be taken away in order to insure good dyeings; all that we need to insert into the cotton is water, nothing needs to be taken away so long as water is added.

Unfortunately, water will not of itself, and just by a wave of the hand on the part of the dyer, take and mix itself with cotton. The waxes on the cotton resist the entry of water, and water itself has a healthy distaste to going anywhere near a wax, so something else has to be mixed with the water to create the union between the cotton and the water.

Alkalies are extensively used for this purpose, soda ash being one of the cheapest and most extensively employed. Soda ash is, relatively speaking, a very strong alkali where cotton is concerned. There is no doubt that its use causes cotton to be wet out very completely when the temperature is raised. But there is a price paid for the use of soda ash inasmuch as this chemical exerts a solvent action on cotton fats and waxes. Soda ash wets out, not by working its way around the fats and waxes, but by knocking them out of its way and then carrying them away. Later on in the process we discover that something vital is gone from the cotton and we try to replace the deficiency by the addition of softeners. There is no softener better for cotton than the fats and waxes which nature provided during the growth of the fiber, and we would do well to remember that the use of soda ash, effective wetting-out agent it is, takes its toll from the spinning quality of the cotton.

The action of soda ash can be modified by the use of other alkalies, such as sodium phosphate, the new sodium meta silicates, as well as prepared alkalies sold under brand names. These alkalies wet-out by emulsion instead of outright solution. They are more expensive but offer advantages when used alone or with soda ash.

The use of prepared oils marks a step forward in the wetting-out of cotton since these oils, when properly compounded and offered to the trade by stable and reputable concerns specializing in such lines, are especially intended and adapted for the economical and efficient wetting-out of cotton.

The greater number of these oils (not all by any means, but by far the greater proportion) are based on sulphonated oils, usually castor oil. These oils have marked wetting-out properties when properly sulphonated, but their use alone does not produce the greatest benefits for all concerned, since sulphonated oils are really the best used when they are put into a dyebath. For use in wetting-out, it is usually the procedure to mix or blend them with additional substances, the sulphonated oil in such instances playing the part of a valuable, a necessary and indispensable carrier, similar in its functions to the chassis of an automobile.

Chemical research has provided for the use of the dyer many very effective penetrants, but of such a nature that they cannot be used alone, so their addition to sulphonated oil increases the value of the oil and also the penetrant. This, though, is found not to be quite enough, so in many oils there are added heavy hydro-carbons, specially prepared and purified for the purpose, which play a part quite separate from that of the oil and the penetrant. They serve, since they are by their nature perfect emulsions, to carry away loosened dirt from the fiber and to keep it in suspension and prevent it from settling down in other parts of the yarn. In some other oils there is also added a solvent for waxes and greases, not so much as is sometimes thought for dissolving out the waxes of the cotton, as for preventing the cotton from absorbing locally at some point of the load too much of the wetting out agents.

Such a blend sounds much more complicated than it really is. It represents a high degree of skill on the part of the manufacturer and results in a product in which each component enhances the value of the other and in which the properties of the whole are greater than the properties considered alone of any of the components.

For wetting-out raw stock, such prepared oils are best used in combination with an alkali. Soda ash may be used since these oils will buffer or neutralize the excess action of the soda ash. By their use the proportion of soda ash may be cut down, the temperature may be reduced a little and the time of wetting-out shortened with the assurance that the wetting-out will be probably more complete than with soda ash alone and with a minimum of damage to the cotton fiber.

Sulphur colors are difficult to dye level, inasmuch as the molecule is very large and heavy. A sulphur color takes advantage of any chance it has to channel. Usually in order to overcome this we are obliged to raise the temperature, increase the amount of sulphide or soda ash, lengthen out the dyeing time, and still feel rather uncertain as to how the dyeing is going to turn out.

The type of prepared oil used for wetting-out is not always the best adapted for assisting a sulphur color to dye level. The requirements of good dyeing are very different from wetting out and the same valuable penetrants and chemicals which assisted the water to find its way around the cotton are rather helpless when mixed with heavy percentages of dyestuff and sulphide. Oil manufacturers have also risen to meet this problem, although not quite so completely as with the aforementioned wetting out. One very good penetrant for sulphur colors is cresylic acid. This seems to possess the necessary authority to act as traffic officer for sulphur colors inasmuch as it thrives in a bath of alkali like the salamander of old used to thrive in fire.

Cresylic acid by itself is a rather pathetic chemical. It wants to do so much but does not seem able to go about it. Several oil manufacturers have taken hold of it by the hand and have blended it with other oils so that it may come to the height of its usefulness in a sulphur color dyebath.

CONTRIBUTOR No. 4968.

Cockled Yarn.

Just what is cockled yarn? Do these contributors answer this question?

EDITOR COTTON:

To explain exactly what happens between the top rolls on a spinning frame when yarn is cockled is very difficult and at best somewhat of a guess, based on very few facts. I was very glad to see the question brought up by "CONTRIBUTOR NO. 4990" in a recent issue, however, for it is a question that offers possibilities of much discussion and consequent differences of opinion. He first asked what actually takes place when cockled yarn is made on a spinning frame; also, "why the little soft lump, without twist, and which will strike out when the least bit of tension is applied to the thread?"

There are really two lines of thought concerning this subject, or rather just how the cockled yarn is made. One group contends that the long fibers are held by the middle roll, after they are caught by the front roll, and the short fibers are then slipped forward by the front roll. Another group claims that the long fibers being held at the same time by the front and middle rolls are broken, and when they break the ends snap back causing the gout or slub that is present in cockled yarn.

Personally, I string along with the first group, therefore let me explain more fully what I think takes place.

The fibers in carded roving are not equally spaced as to length along the roving; that is, one inch may contain 50 per cent more long fibers than the inch next to it. When the roving containing a large percentage of long fibers comes between the rolls, being caught by both middle and front rolls at the same time, the strength of these fibers is sufficient to withstand the tension of the revolving front roller, consequently the shorter fibers that have already passed the middle roll are slipped forward, causing the gout. If a piece of this yarn is caught on both sides of the gout, or slub, and pulled out it will be found that the long fibers will break, a few at a time, allowing the short fibers that were slipped up to straighten out, causing the piece of yarn to get longer. When the gout is pulled completely out a very weak place containing only short and broken fibers, less the proper amount of twist will be noticed.

Of course there is no way to prove conclusively

that this is what takes place when cockled yarn is made, and I do not believe that anyone can prove that his diagnosis is absolutely correct, for I think the subject is so broad and flexible that all we can hope for is some sort of conclusion derived from reasoning and deductions. The more different opinions we have offered, however, the nearer we could come to determining just what does take place. I would especially like to see the discussions of those whose opinions are different from my own.

CONTRIBUTOR No. 5007.

Suggestions for Combed Yarn Lay-Out.

EDITOR COTTON:

This is in reply to "CONTRIBUTOR No. 4963," who asked in a recent issue as to (1) the breaking strength in pounds; (2) the per cent variation in breaking strength; and (3) the per cent variation in yarn number for 40s, 50 and 60s warp yarn, combed; making the 40s out of 1-inch stock, and the 50s and 60s out of 1⅛-inch stock.

Now, in answer to his questions, I will say that the breaking strength on 40s combed peeler from 1-inch stock will run between 36 and 40 pounds, depending on the character of the cotton used and the care used in manufacturing it. The average will probably be around 37 pounds. 50 and 60s C.P. from 1⅛-inch cotton should break 36 and 27 pounds respectively.

The per cent variation in the average breaking strength of eight bobbins will run as high as 22 per cent on 60s, 25 per cent on 50s and 26 per cent on 40s during the course of a year's run. By this I mean that the average breaking strength uncorrected for size or moisture of eight bobbins of 60s will go as low as 23 and as high as 30; 50s from 31½ to 40½; and 40s from 32 to 42 pounds. This will be due to the variations in size, humidity, and the character of the cotton being used.

The per cent of variation in size should be held to five per cent on these numbers, although individual bobbins may vary as much as 10 to 12 per cent. The sizing variations will reflect the care used in the card room sizings and in the regulation of the picker lap weights.

I am not entirely in accord with the lay-out he has given, and which is reproduced above. If he can draft 19.2 on 60s, he is throwing away dollars every day he continues to draft 50s on 16, and 40s only 12.8. To be sure he will have to make different hank rovings which will require a little more sizing and production planning, but just figure the saving.

I am giving, in Fig. 1 herewith, the lay-out as he presented it, with slide rule calculations on draft and average production figures in pounds per delivery per 55 hours.

In Fig. 2 I am presenting a suggested lay-out for him. Note the changes and the resulting production figures. Not to mention the fact that these heavier sizes will run better and stretch less in the creels, resulting in more even work and better breaking strength.

CONTRIBUTOR No. 4966.

FIG. 1.—HIS LAY-OUT.

Process	Size	Assume	Draft	Production
Picker	12½-ounce			
Cards	44-grain	7% waste	115½*	416.35
Sliver lap	465-grain	Double 20	1.89	7177.5
Ribbon	465-grain	Double 4	4	7177.5
Comber	48-grain	Waste 16%	65*	450.23
Br. Drawing	50-grain	Double 6	5.75	704
Fin. Draw	50-grain	Double 6	6	704
Slubber	.75-hank		4.5	80.08
Inter.	2.00-hank		5.34	27.17
Jack	6.25-hank		6.25	6.49
Spinning	40s		12.8	
	50s		16	
	60s		19.2	

(*) Draft too long.

FIG. 2—MY SUGGESTIONS.

Process	Size	Waste	Double	Draft	Production
Picker	12½-ounce				
Cards	51-grain	7%		100	482.5
Sliver lap	480-grain		20	2.08	7408.5*
Ribbon	480-grain		4	4	7408.5*
Comber	60-grain	16%	8	54	562.76
Br. Draw.	60-grain		6	6	841.5
Fin. Draw.	60-grain		6	6	841.5
Slubber	.60-hank			4.32	105.27
Inter.	1.75-hank		2	5.84	32.395
Jack	4.25-hank		2	4.85	11
	5.25-hank		2	6	8.195
	6.25-hank		2	7.15	6.49
Spinning	40s from 4.25			18.8	
	50s from 5.25			19	
	60s from 6.25			19.2	

*Can be run heavier if production is needed.

Controlling Bad Work from the Card Room.

EDITOR COTTON:

I have been especially interested in the articles on controlling bad work from the card room to the spinning room, which have appeared in recent issues of the magazine. This is a problem that is tackled in a great many cases in a half-hearted manner. Bad work can be reduced to a minimum if gone at systematically and in the right spirit. If gone after in this manner, much better running carding, spinning, spooling, warping, etc., will be the result.

One hard end from the card room will cause from one to five ends down in the spinning room. It might also be the cause of a spoiled leather roll, and I believe that every one of the pieced up ends will break somewhere in the process between spinning and weaving.

The roving on the different sets of speeders should have a permanent color mark that will designate the set on which the roving was made. This mark should be made parallel to the bobbin, and not just a dab, as this would not be distinguishable after about half of the roving is taken off the bobbin. Some speeder tenders take full advantage of this. The overseer of spinning should have orders not to allow his help to accept any roving that is not marked correctly. It should be returned to the overseer of carding.

HANK BOARD

MONDAY MAY_____1931

FRAME No	NAME	SINGLE	DOUBLE	HARD ENDS	BUNCHES	MISCL	TOTAL
1-2	M Mark	1	0	4	3	5	13
3-4	J. Henry	0	1	2	2	3	8
5-6	H Park	1	2	1	1	4	9

FIG. 1

All bad roving should be inspected by the overseer of spinning before being returned, by someone that can be trusted, to the overseer of carding. This will let the help know that you mean business.

A sheet similar to that shown in Fig. 1 should be

made out and posted on the hank board each day. This should show the amount of bad work each pair of frames or speeder tender made during the day. This sheet can be made out for a week, but personally I prefer a daily sheet, as it shows the help that the boss and second hand are on the job.

There are about ten distinct colors to be had in crayons, so where more than ten speeder tenders are on the job it is necessary to use a combination of colors. About three or four combinations should be saved for spare speeder tenders. This stops regular tenders from claiming that someone else was on their frame when bad work was made.

When using two colors care should be taken to see that the colors are marked to the bottom of the taper. Otherwise, the wrong hand may get credit for the bad work. These results can be obtained by being firm about not allowing the spinner to accept work that is not marked correctly.

All bad roving should be counted and credited to the one that made it immediately after coming from the spinning room. This should be done at a specified time each day.

Posting bad work honestly and without favor, and insisting that the roving be marked correctly, as

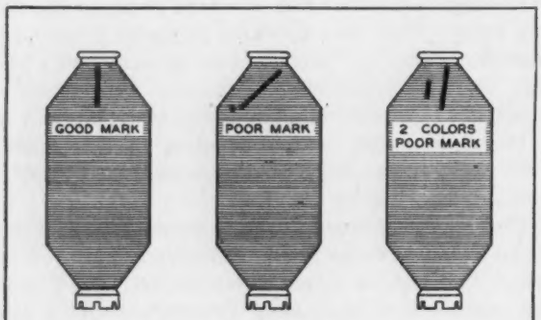


FIG. 2

shown by Fig. 2, will soon reduce to a minimum the amount of doublings and singlings, bunches, soft and run over and under roving, hard ends, etc.

Speeder tenders should not be allowed to return roving that has been fixed in regular doffing boxes of good roving, but should be picked up daily and put into a special truck for this purpose. Pieces that are sent to the spinning room with full roving are seldom put in the creels, but are thrown into empty boxes and mixed with bobbins being returned to the card room, thus becoming bad roving again by bruises, etc.

All roving should be packed in trucks, rather than thrown in, as this will cause quite a bit of the roving to pick up oil from the ends of the bobbins. It will also cause bunches on the work that the average spinner will not blow off before putting the roving in the creel.

Where several different hanks of roving are made, a mark should be made on the top of the roving for the identification of the speeder tender and a mark on the bottom of the roving to designate the hank roving. I have seen this system reduce bad work from three or four truckloads daily to thirty or forty bobbins. This change taking place during the short period of two weeks.

CONTRIBUTOR No. 4856.

Card Settings for 20s Yarn.

EDITOR COTTON:

I was interested in the question of "CONTRIBUTOR No. 4967" asking for suggestions as to card settings for carding on 20s yarn. He also wanted to know what should be the proper blows per inch on two-process pickers on this work.

Needless to state, there are a great number of settings and general conditions in a cotton mill which contribute to uniformity and strength in yarns, besides card and picker settings and speeds. These two, however, are processes of great importance, and I might state that Draper high standard in strength is actually obtained from the enclosed settings, from 7/8-inch Middling cotton, making 18s and 20s yarn. These card settings are those used by Platt Brothers, of Oldham, England, textile machine makers.

Your contributor states he is carding 120 pounds per card per 10 hours, with 100 draft. This, in my opinion, is good.

The card settings I would suggest for his work are:

Doffer to cylinder	7/1000
Licker-in to cylinder	7/1000
Back plate to cylinder, top	22/1000
Back plate to cylinder, bottom	17/1000
Top of licker-in screen to half-circle	17/1000
Middle bar to licker-in	17/1000
Back of licker-in screen to cylinder	17/1000
Bottom mote knife to licker-in	12/1000
Top mote knife to licker-in	12/1000
Cylinder screen to cylinder	17/1000
Cylinder screen to cylinder	34/1000
Cylinder screen to cylinder	68/1000
Feed plate to licker-in	7/1000
Licker-in cover to feed roll	187/1000
Bottom front plate to cylinder	34/1000
Front plate to cylinder, top	62/1000
Front plate to cylinder, bottom	22/1000
Flats to cylinder, all around	10/1000
Flats to top front plate	34/1000
Doffer comb to doffer	12/1000
Top flat comb to top flat	17/1000
Carrier block to flexible bend	17/32-inch

My suggested speeds for two-process pickers are:

Breaker Pickers.
Laps to be 16 ounces per yard.
Laps to be approximately 47 pounds net.
Time to make lap, 8 minutes.
Two-blade beaters to run 1,200 r.p.m.
Three-blade beaters to run 800 r.p.m.
All fans to run 1,200 r.p.m.

Finisher Pickers.
Laps to be 14 ounces per yard.
Laps to be approximately 44 pounds net.
Time to make lap, 11 minutes.
Two-blade beaters to run 1,200 r.p.m
Three-blade beaters to run 800 r.p.m.
All fans to run 1200 r.p.m.

On the breaker picker I would set the beater blade 1/4-inch from feed roll, and on the finisher picker, use 3/16-inch on this setting.

CONTRIBUTOR No. 4970.

EDITOR COTTON:

Your "CONTRIBUTOR No. 4967" submitted an interesting question as to card settings on cards for making 20s yarn from 7/8-inch Middling cotton, carding 120 pounds a day with a draft of 100.

He gave his present settings, and asked for suggestions as to changes, and I am reproducing his settings in one column below, and in the right-hand column I have listed the six changes I would suggest.

Otherwise I think his settings are all right under the conditions.

	His Settings	Suggested Changes
Feed plate to licker-in	12	17
Mote knives, top	10	
Mote knives, bottom	7	
Licker-in to cylinder	10	7
Back plate to cylinder, top	17	
Back plate to cylinder, bottom	34	
Flats to cylinder, back	12	10
Flats to cylinder, center	10	9
Flats to cylinder, front	10	9
Front plate to cylinder top	34	
Front plate to cylinder, bottom	27	
Doffer to cylinder	10	
Doffer comb to doffer	34	22
Licker-in screen	17	
Cylinder screen, back	34	
Cylinder screen, center	34	
Cylinder screen, front	3/16"	

For the most part, I think that this man is working his cotton too lightly. I mean by this that he would get much better results if he would set a little closer on the licker-in, flats and doffer with relationship to the cylinder. On the other hand, I am of the opinion that he is much too close on the feed plate, as this setting could spoil the breaking strength.

As to beats per inch on two-process picking on this work, we use two-blade beaters in our breakers and strike the cotton 30.55 blows per inch. On the finishers, we use the carding beater at 65.43 blows. This is a total of 95.98 on both processes. For good breaking strength I prefer carding beaters in finishers to blade beaters.

CONTRIBUTOR NO. 4985.

Making Cleaner Laps.

"Wash" tells how he thinks cleaner laps may be obtained. Read it.

EDITOR COTTON:

I would like to offer a few suggestions as to how to make cleaner laps in an effort to prove of some help to "CONTRIBUTOR NO. 4838", who recently stated that any suggestions along this line would be appreciated. Our friend gave us the model of his machines, his fan speeds and production, but failed to give us the most important item pertaining to the subject—blows per inch. This factor has a very important relation as to the cleanliness of our laps.

Other items of a very important nature are: the setting between the beater blade and feed rolls; the setting between the beater blade and stripping plate; the speed of the fan; the setting of the grid bars.

Let us first consider the part which air currents play. The air current must carry only the cotton fibers and deposit them onto the cages and at the same time permit the heavier impurities to fall through the grid bars. Therefore, if too much stock is deposited with the waste droppings under the beater box, it may be attributed to either the beater revolving too quickly, the grid bars being set too far apart, or the speed of the fan being so slow that the current of air formed is too weak to carry the fibers away without permitting them to fall between the bars. Excessive speed of the beater will destroy a certain amount of the air current created by the fan.

On the other hand, if the lap made contains quite a bit of foreign matter such as seed, leaf, etc., the causes may be just the reverse of those mentioned in the preceding paragraph. That is, the beater may be revolving too slowly, failing to thoroughly open the cotton, or the grid bars may be set too close together, preventing the impurities from passing between them, or the fan may be running at such a high rate of speed that the air current created is strong enough to carry the impurities with the cotton, rather than allowing them to fall out while passing over the grid bars.

At times the dampers which regulate the air coming through each screen are either entirely or partially closed, which causes the cleaning power of the screen to be reduced. As the dirt cannot pass freely, it either collects on the side of the screen or goes along with the cotton, causing dirty or uneven work.

It is thus seen that if the beater speed, dampers and grids are satisfactorily arranged the speed of the fan would have to be regulated to prevent the two evils previously mentioned.

I have never had the fan speed exceed 1,000 r.p.m. It will be recalled that I have always advocated a light sheet of lap, as I have found that by reducing the lap rather than the fan speed more foreign matter can be extracted from the cotton.

To eliminate lumps that appear in laps from time to time, I would advocate the following: examining the beater blades to see that they are properly sharpened; setting the beater blade to the feed rolls at a distance equal to a closed two foot rule; setting the stripping plate as close as possible to the beater blade, precluding the possibility of the stock being carried around a second time; a beater speed of approximately 1,200 r.p.m. (for a two-blade beater).

The cause of lumps in any sheet of lap is the result of the beater failing to open the cotton properly, and in order to open the cotton as it should be opened it is necessary to have perfect beater blades striking the stock about 45 blows to the inch.

WASH (R. I.)

Foreign Cotton Production.

(Continued from page 928.)

For the past few years the Spanish government has paid considerable attention to cotton growing in that country and gave substantial financial assistance. In Argentina there is a cotton division in the Ministry of Agriculture which has for its purpose the introduction of modern cotton growing practices. In Paraguay, cotton growing is promoted by the Agricultural Bank of Paraguay. Colombia invited the International Cotton Federation to send a mission to survey its cotton growing possibilities and such mission was sent.

The International Cotton Federation, representing the cotton manufacturing interests of foreign countries, took a lively interest in some of the previously mentioned cotton growing promotion endeavors. As a matter of fact, one of the reasons which brought about the formation of this Federation some 26 years ago was the encouragement of cotton growing in countries outside of the United States. The motive behind this effort was mainly the

Du Pont Rayon
helps in Reselling . . .

EVERY mill man and converter has two big jobs. One is production. One is distribution or reselling.

* * *

The production end is vitally concerned with economy . . . rayon yarn strength . . . evenness . . . put-up . . . dye and finish characteristics . . . elasticity . . . lustre . . . and a dozen other quality and service features.

It is generally conceded that Du Pont Rayon sets the standard on production points.

* * *

NOW ANOTHER FEATURE RISES! The name du Pont has assumed new importance in merchandising. Du Pont yarns are making high fashion. Du Pont advertising is telling the style-conscious market . . . setting new values on the finest of all rayon . . . Du Pont Rayon.

* * *

IT PAYS TO SAY . . . "This is made of Du Pont Rayon." You get quick attention. You will find acceptance for better cloths . . . things that rise above the tough spots in price competition.

DUPONT RAYON
REG. U.S. PAT. OFF.

DU PONT RAYON COMPANY,
Empire State Building,
350 Fifth Avenue,
New York, N. Y.

VARIED TYPES OF RAYON . . . ALL THE FINEST

hope that with the spreading of the risk of crop failure or short crops over a large number of cotton growing areas the supply of cotton would be more stable and price fluctuations less violent. The Sully Corner in 1904 which advanced the price of cotton from 11½ cents to 18 cents within two months was a strong argument in favor of such efforts. The short crops in the United States during the years 1921, 1922 and 1924 which created a genuine, though unjustified, fear among cotton manufacturers lest the United States will no longer be able to furnish the normal requirements of raw cotton was another stimulus in this direction. At the various world conferences of this organization the raw cotton problem has been an important part. The Federation devoted considerable attention to India and other cotton-growing regions and made frequent representations to the various authorities to take steps in order to improve the production and marketing of cotton. Its secretary travelled extensively in India, Egypt, Anglo-Egyptian Sudan and South America in order to survey and report upon cotton growing possibilities.

Results.

Although this description of the cotton-growing endeavors is very brief and sketchy we can see that efforts to introduce or expand cotton growing have been made in various parts of the world and that these efforts have been supported directly or indirectly by the central and local colonial governments of the principal cotton-consuming countries as well as by the governments of the less industrialized countries desiring to increase their natural resources; also, by semi-public agencies with or without government aid. As a consequence of these endeavors surveys of cotton growing possibilities were made in many regions. New irrigation facilities were constructed or existing facilities expanded, railways and other means of transportation were built and agencies were created for improving the quality of cotton as well as the farm and marketing practices. The concrete results of these efforts are indicated in Table V, which shows that in the new fields cotton growing rose from practically nothing to nearly 600,000 bales while in the older cotton growing countries production increased about one-half.

Methods of Reducing Seconds.

(Continued from page 923.)

mains that no one should expect to make good cloth with bad filling.

Everything that has been said in discussing seconds has been more or less re-telling, over and over again, things that we already know and see every day. Is there not some definite action to take that might better our goods?

First of all, let us *know* our off-qualities; make an inspection in the cloth room something besides a cutting table. Install a system of classifying our troubles and then act when you get the needed information. Have your system so arranged that the cloth

GIVES BOBBINS 75% LONGER LIFE

The Lockhart, S. C., plant of the Monarch Mills, which uses two Termaco roving bobbin cleaning machines, reports that its bobbins now last 75% longer than when it used another make of bobbin cleaner . . . . that a Termaco improves splintered bobbins, cleans better and makes less fly.

The foregoing facts are taken from one of the actual "case histories" secured from representative Termaco users.

These entirely unbiased reports have been put into a "fact book" that mill executives will find of particular interest as it shows what operating savings and betterments are being obtained by mills that are cleaning roving bobbins with Termaco machines.

A copy of this book will be sent without obligation to mill executives. Write for your copy of TERMACO FACTS today.

THE TERRELL MACHINE CO·INC
CHARLOTTE·N·C·

General Supply Co., Danielson, Conn., Representatives for N. Y., N. J., Pa., New England States and Canada.

Consider the DRIVE

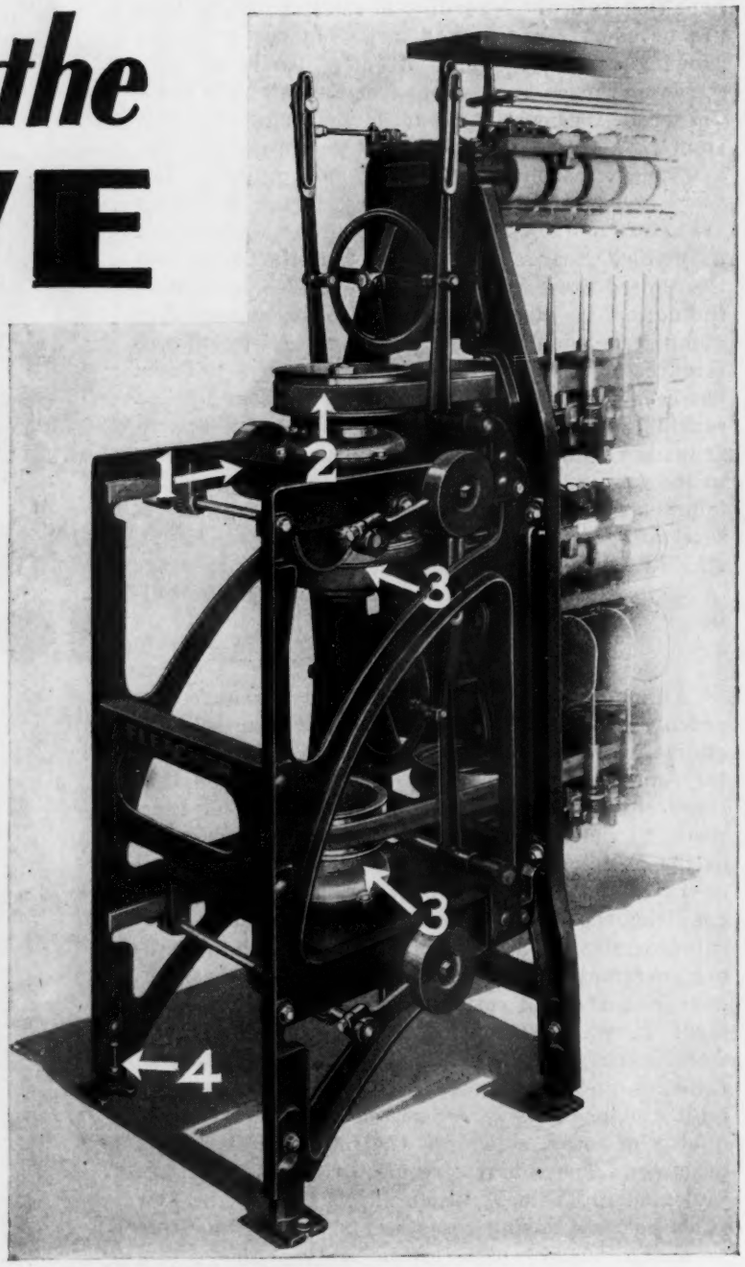
Experienced throwsters realize that drive is all-important. This emphasizes in no small way the many drive features developed by Fletcher Works, chief among which are:

1—ADJUSTABLE MOTOR BASE (*Patented*). Positive belt tension which provides absolute uniform contact, belt to spindle, is maintained through sliding motor, patented Fletcher feature. Slack in belt is automatically taken up through pawl and weight arrangement—no adjustment necessary—unvarying spindle speed, providing accurate twist at all times, is maintained.

2—USES BELT WITHOUT LAPS. Belts are made endless before application which permits the use of belts without laps—belts quickly replaced when necessary without removing a single part—large pulleys eliminate sharp turns lengthening belt life.

3-3—MOTOR FOR EACH DECK. Each deck is driven by an individual motor making each deck an independent unit and allowing different twists on the same machine at the same time. If one deck is stopped for belt change or other adjustment, other deck may be kept running.

4—SCREW ADJUSTING FEET are securely bolted to rugged frames after proper alignment with the floor is made. Rigid support means smoother operation.



FLETCHER
MODEL 30
TWISTER
FOR SILK AND RAYON

FLETCHER

THROWING MACHINERY FOR SILK AND RAYON, CENTRIFUGAL EXTRACTORS AND NARROW FABRIC LOOMS

FLETCHER WORKS, . . . PHILADELPHIA

FORMERLY SCHAUM AND UHLINGER · ESTABLISHED 1850

room will give an immediate report, not only to the overseer in the weave room but to the second hand, and specify the loom. If the trouble is a running defect; for instance, an open reed, bad selvage, stop motion not knocking off, or thin places, don't wait for the cloth to get back to the "show up table", take the loom number and report it at once. Why let a loom continue to run making bad cloth? Stop it and stop it *quick.*

Have your inspections so handled that each second hand, or possibly each fixer, can know how his off-qualities compare with the others in the same room. Records are very inspiring and any red-blooded American will soon get tired of being the worst man.

The best remedy is not in the cloth room. Sometimes I think many of us really believe that the best way to fight bad cloth is at the grading table. Cloth that is a second is a second and all the cloth rooms in the world cannot help it. The only way to really reduce off-qualities is to start with the superintendent and go on down the line until you reach the sweepers and scrubbers and then include them also. It is a matter of training; train to be exact; accept nothing that is not all right; train to look for faults and when you find them, correct them. I have heard overseers and superintendents complain because their employees did things wrong. The question is, "How did we train them, and how shall we train them?" If we have inefficient employees and they remain inefficient, then we can blame only ourselves. If we don't follow up our responsibility, how can we expect them to be more attentive than we are?

To my mind the whole question sums itself up to this: Be wide awake and observant, teaching all under you to be as you are. The nearer we approach perfection, the lower our off-qualities will be. Try to find your troubles, whatever or wherever they may be, and, when you find them, never be satisfied until they are corrected.

(Having found this first article valuable, you will be interested in reading the others in this series. Each brings out some new, good point. Subsequent articles will appear as regularly as possible.—The Editor.)

A New Era in Textiles.

(Continued from page 921)

or group none of the conditions named may be found to apply, but with a knowledge of the exact condition to be met, it should not be difficult to determine just what would be needed to make corrections. If the need for analysis exists there are indications of a local nature, sometimes very unusual, that would seem to emphasize it. Several years ago I received quite a shock when a stranger came into my office and applied for a certain job in the mill which he said involved nothing more than sitting by a window. He said that the job was filled at the time and that he merely wanted to get his application on file so that he would be in line should a vacancy occur. I need not add that we immediately began careful search to find just where in the plant such a condition could exist. In my treatment of the factor of plant and equipment and its relation to the position occupied by the leaders, there

The longest-lasting, most durable and economical TEXTILE LEATHER!

ORIGINAL and GENUINE
"The Leather with the Hair on"
Bondaron
REG. U. S. PAT. OFF.

Check Straps
Harness Straps
Bumper Straps
Loop Pickers
Hold-up Straps
Round Leather Belt
and
Picker Leathers

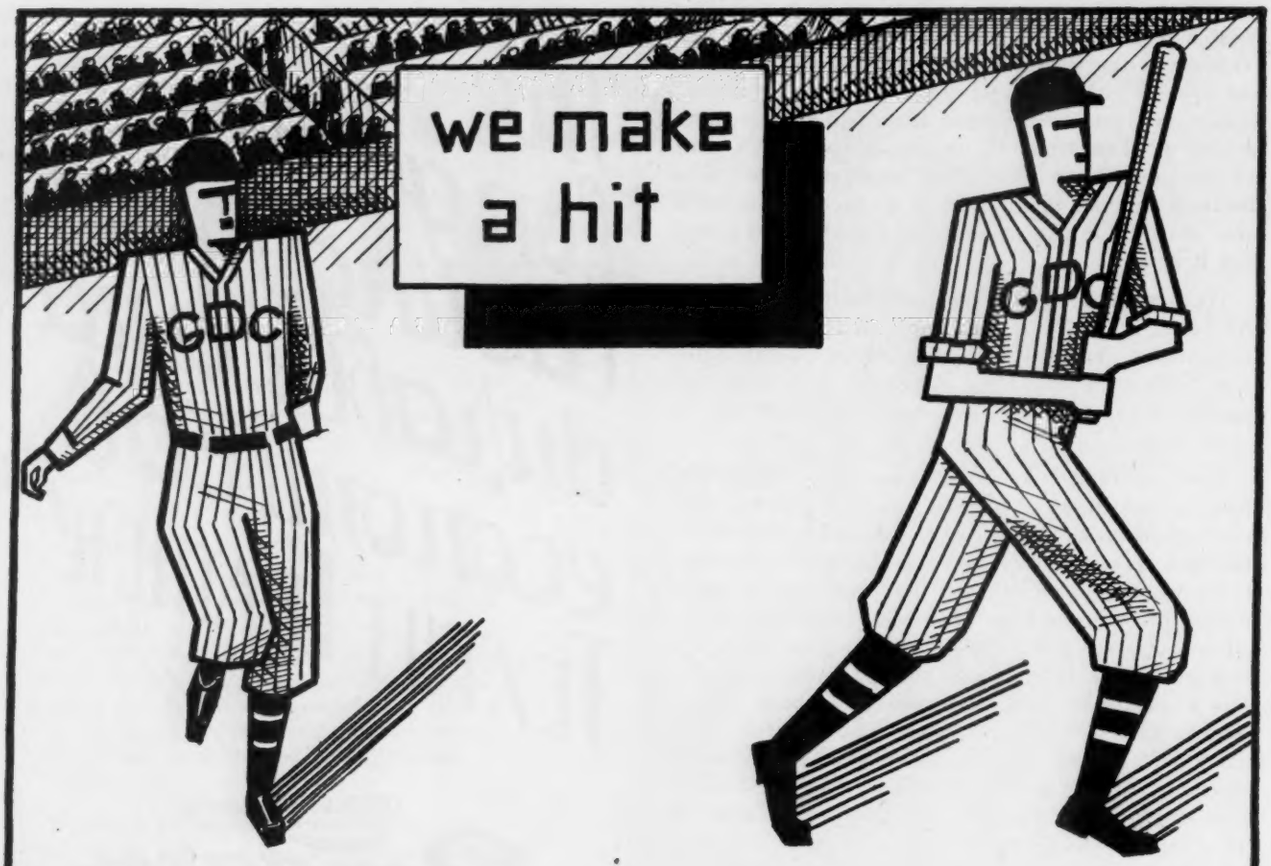
Send for Booklet 101

Manufactured exclusively by:

CHARLES Bond COMPANY

617-623 Arch Street
Philadelphia, Pa.

Leather Curriers and Manufacturers of Textile Leathers and Belting



AND SCORE BY USING

G D C
dyestuffs,

specialties and expert
technical advice

GDC

GENERAL DYESTUFF CORPORATION

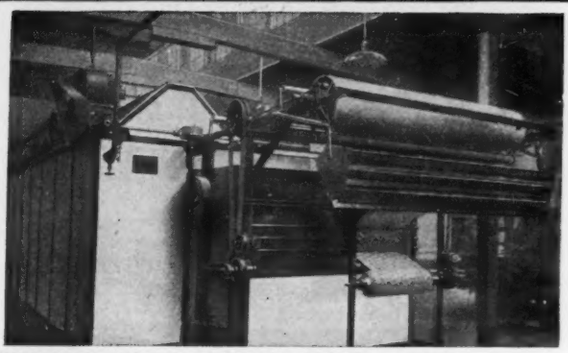
230 FIFTH AVENUE, NEW YORK, N. Y.

are certain significant facts which may here be referred to as emphasizing the need for immediate aggressive action by the entire industry, but if the individual mill cannot for good and sufficient reasons consider any expenditures for equipment, they should at least prepare for the more efficient operation of what they have. To strengthen their organizations will produce immediate results and make their positions more secure than they would be without this view.

In order that we may better understand recent developments in machine design, let us go back to a study of the early use of power-driven machinery in the manufacture of textiles. Beginning with the invention of the first spinning frame by Arkwright in 1769, there was an era of development, during which time the industry was changed from hand-operated machinery to power-driven machines. Immediately supplementary processes were needed to supply stock that was well prepared and in sufficient quantities before large scale production could be achieved. This called for the invention of other machines and eventually these were supplied so that every major operation from opening to weaving could be done on power-driven machines. Standardized processes and design were the final result of this and although most of these early inventions were made in England where an attempt was made to prevent their exportation, models were smuggled into this country and soon there was a rapid growth in both countries. As this continued the demand for textiles increased and the machine builders were kept busy supplying equipment for new mills.

In 1894 an American machine builder brought out the automatic loom which was widely accepted here but so strenuously objected to by the operatives of the English mills that their introduction there was not successful. In this event the differences that were to continue up to the present time were first brought out and the field for the development of labor saving machinery was to be left open to the American builders. They were, however, so busy supplying the demand for equipment for new mills that there was neither the incentive nor opportunity to fully develop it. Cloth was coming to be used for industrial purposes and the growth of the automobile industry increased the consumption so that a point of saturation was not realized before the accelerated demand occasioned by the World War was being felt. This, of course, destroyed any opportunity of determining this until it was over so the industry continued to grow. In a recent conversation with a machine agent, he stated that a typical example of the condition of their orders was reflected in the fact that delivery of new machinery on order sometimes could not be made in less than eighteen months. During all of this time refinements were being made to make the machinery more efficient but there were few fundamental changes. At the end of the war the fact was revealed that there was more producing capacity than was needed, at least as long as double shift operation continued, and there was therefore a sharp decline in the demand for new machinery. Very naturally the machine builders turned to the development of new models that would offer sufficient saving in labor to induce the mills to replace old machinery and

MODERN EQUIPMENT
Indispensable to Profitable Production



"HURRICANE" AUTOMATIC LOOP DRYER

FOR materials that benefit by air drying at *moderate temperatures* and *without tension*, the "Hurricane" Loop Dryer is unexcelled. As the cloth passes through the machine loosely festooned over the poles of a conveyor, it is *uniformly* dried by currents of warm air.

VACUUM EXTRACTORS

For operating in range with dryers, scutchers, quetsches or other equipment, or wherever it is desired to remove excess moisture uniformly and thoroughly from goods in open width, eliminating creases and folds.

RAW STOCK DRYERS

Greater Capacity, with Less Steam and Power

192-A

THE PHILADELPHIA DRYING MACHINERY CO.
3351 Stokley Street, Philadelphia, Pa.
DRYERS for ALL Textiles from Raw Stock to Finished Fabrics

Who's to Blame?

—when doffers and Top Flats get out of align-ment?
—when Card Clothing becomes oily?
—when Comb Boxes get hot?
Put the blame right where it belongs . . . on wasteful, undependable liquid oil. These card room troubles are a thing of the past in mills that have adopted NON-FLUID OIL . . . the Modern Lubricant for Carding Machines.
NON-FLUID OIL is made highly adhesive by a special process so that it stays in bearings. It doesn't get on card clothing and lubricates so effectively that it practically eliminates friction. Better yet, it saves money by lasting 3 to 5 times as long as liquid oil.

Write today for testing sample and bulletin, "Lubrication of Textile Machinery."

New York & New Jersey Lubricant Co.
Main Office: 292 Madison Ave., New York, N. Y.
So. Agent, L. W. Thomason, Charlotte, N. C.

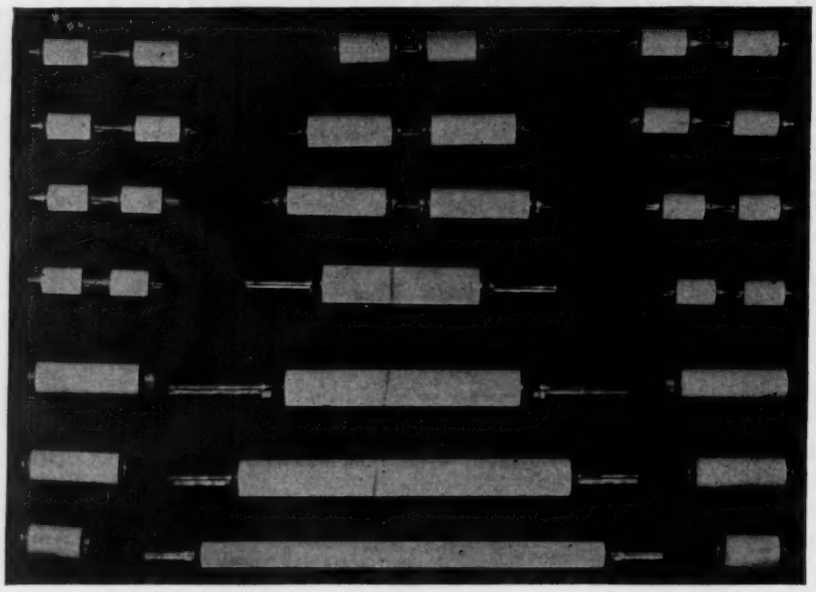
WAREHOUSES

Chicago, Ill.	Providence, R. I.	Atlanta, Ga.
St. Louis, Mo.	Detroit, Mich.	Charlotte, N. C.
New Orleans, La.	Spartanburg, S. C.	Greenville, S. C.

TRADE MARK REGISTERED
NON-FLUID OIL
IN U.S. PAT OFFICE & FOREIGN COUNTRIES

MODERN TEXTILE LUBRICANT

Better Lubrication at Less Cost per Month



Predominating!

Even felt cloths can stand out in their field, as is proven by the unanimous approval of "Philadelphia" throughout the textile industry.

Roller Cloths of the correct cushion and uniformity.

Clearer Cloths with thick strong nap that cannot pull out. Uniform length that clears rolls entirely of short fibre.

Slasher Cloths with enough cushion and porosity to thoroughly force sizing into yarn.

Philadelphia specializes in Stamping Blankets.

Our Southern Sales Manager, Clarence B. Seal, will gladly assist you on felt cloth problems. Address inquiries to Philadelphia.

PHILADELPHIA FELT COMPANY
FRANKFORD, PHILADELPHIA, PA.

Philadelphia *Felt Cloths*

PROVEN IN SERVICE

THE NEW ATLANTA HARNESS WALL SHAFT

"Dr. Weaver's" Favorite Prescription for Prolonged Youth in Harness ~~

"Is your harness' life far too short? You can prolong it approximately 20% simply by specifying Atlanta Harness with Wall Shaft. This new improvement, which consists of an extra shaft section at top and bottom of harness, keeps the harness young and efficient for a maximum length of time."

'Dr. Weaver', the loom harness specialist, never hesitates in recommending Atlanta Harness with the Wall Shaft because he has seen it prove itself many times in many mills. He not only prescribes it for longevity, but also endorses it for reducing seconds and price per cut.

The screw eyes do not come in contact with the twine, meaning no deterioration from collected moisture and strain on harness at screw eyes.

Write for sample and further information on Atlanta Harness with Wall Shaft.

ATLANTA HARNESS & REED MFG. CO.

P. O. BOX 1375 TEL. MAIN 0517-0518 ATLANTA, GA.

Satisfactory Service Since 1919

COTTON HARNESS, MAIL HARNESS, SELVAGE HARNESS, SPECIAL TWIST CABLE HARNESS, REEDS FOR ALL FABRICS, SLASHER COMBS, STRIKING COMBS, MENDING EYES, HEDDLE RODS, STANDARD HEDDLE FRAMES, ALL METAL FRAMES FOR HEAVY DUCK.

secure a cost advantage that would better qualify them to meet the intense price competition that was being felt.

Mention should here be made of the development of auxiliary equipment. Whereas early mills were equipped with oil lamps, the mills of today are lighted so that the machinery can be operated efficiently at any time. Humidity conditions in the old mills were dependent largely on the weather but with the modern humidifying system any condition of relative humidity can be obtained and controlled with sensitive apparatus that is a part of the system itself. Heating has evolved to the point that we now have the unit heater with its circulating fan and temperature control and a perfectly uniform temperature can be maintained throughout the entire plant. We also have the central station and the combined unit heaters and humidifiers and the result of all of this has been to remove the weather problem as a factor of operation. Limitations which were heretofore imposed because of the variableness of operating conditions have been thus removed and modern machine design assumes that these will be controlled to the extent necessary to secure efficient operation under any condition of weather or light.

The foregoing synopsis assists us in understanding the developments of the last ten years and to the mind of the writer establishes the fact that we have entered into a new era of development and change. Many new and revolutionary machines have been introduced to date but already there are predictions of other changes equally important and it is both logical and probable that as the field of labor saving advantage is explored we shall see other changes of fundamental importance, thus causing much that is now in use to become obsolete. The scope of this article does not permit a detailed study of the individual machines that have thus far been brought out and it will suffice to say that they will be found in every branch of textile manufacture including the finishing as well as yarn and cloth making.

It is natural that the suddenness with which the industry realized that the saturation point had been reached should have caused so rapid a change, and to the individual mill this should indicate the need for aggressive policies so that they may quickly adjust themselves. The mills that are now leading the race for lower costs have already accomplished this, at least to an extent that is sufficient to make their present positions secure and what they have done may be taken as an index of the possibilities of the situation, so that it is no longer a matter of conjection. Our problem therefore resolves itself into a determination of when the position of any mill would seem to require its consideration of a program of plant and equipment betterment.

Probably the most powerful retarding influence at the present time is that of the poor general condition of business. Manufacturing margins at current prices of cotton and cotton goods are too small to allow any but the leading mills an even break, and operating losses are eating into the accumulated surpluses of many. Bankruptcies, foreclosure of mortgages by bondholders and the liquidation of mills are frequent

THE AKRON BELTING CO. ESTABLISHED "AKRON" 1885 AKRON, OHIO, U.S.A.

This Brand
has meant First Quality
LEATHER BELTING
to two generations of
SOUTHERN TEXTILE EXECUTIVES

Your orders are solicited.
Our guarantee protects your purchase.
We Ship Quick!

The Akron Belting Company
Akron, Ohio

Direct Sales Representatives:

L. L. HASKINS
P. O. Box No. 241
Greenville, S. C.

L. F. MOORE
P. O. Box 1293
Memphis, Tenn.

LAMBETH
spinning & twisting
TAPES

YOUR cost on spinning and twister tapes is summed up in first cost plus wear. That is why mills in every section which keep careful cost records have standardized on Lambeth—for Lambeth tapes give lower cost service.

Write for prices and samples on Lambeth Spinning and Twister Tapes.

LAMBETH ROPE CORPORATION
CHARLOTTE · N · C

ALL STEEL
ECONOMY
FIRE PROOF
BALING PRESSES
ALL SIZES FOR ALL PURPOSES
LARGEST LINE BUILT IN U.S.A.
ECONOMY BALER CO., DEPT. C, ANN ARBOR, MICH., U.S.A.

Good Bristles
Good Design

Only the best can survive the wear and tear that textile brushes receive. Gastonia Brushes have made a record for enduring service, and a reputation for being perfectly adapted to the job—the result largely of expert selection of bristles and scientific design.

Brush Repairing

In the repairing of rolls only the best of raw stock is used. Gastonia repair work gives longer service. Wooden cores replaced.

Write for prices.

GASTONIA BRUSH CO.
Gastonia, N. C.

Barber Manufacturing Co.
Charlotte, N. C.
QUALITY
SPINNING and TWISTER
TAPE

THE COMPLETE SERVICE YOU'VE BEEN LOOKING FOR

At last you can get complete service on the rebuilding of Card Screens, Picker Screens and Spinning Frame Cylinders from a company fully equipped to do the work. As the only company fully equipped to do this type of work in the South, it is considered the fulfillment of a long-felt need by leaders in the textile industry. Write for information.

GASTONIA TEXTILE SHEET METAL WORKS
222 E. Long St. Gastonia, N. C.

Rebuilding Service PICKER SCREENS · CARD SCREENS and SPINNING FRAME CYLINDERS

Repair Service on
STEEL ROLLS—SPINDLES—FLYERS

A Service of Economy - -

Because the nearness of our plant to you means low freight rates, because the work turned out by us is of lasting quality, because it eliminates the cost of new units—this Gastonia service is the last word in economy. Write for quotations.

GASTONIA ROLLER, FLYER & SPINDLE CO.
GASTONIA, N. C.

IDEAL MACHINE CO.
Repair Headquarters for
STEEL ROLLS—SPINDLES—FLYERS
We make a specialty of
METALLIC DRAWING ROLLS
and also do
Overhauling, Moving and Erecting
BESSEMER CITY, N. C.

BARKLEY MACHINE WORKS
MANUFACTURERS OF TEXTILE MACHINERY PARTS
Cut Gears—Cast Tooth Gears
Parts for Kitson Pickers, Nasmith Combers, Whitin Combers. General Textile Repairs.
GASTONIA, NORTH CAROLINA

Textile Development Company

PRACTICAL MILL CONSULTANTS
The Textile Development Co.
Sidney S. Paine, *President*
80 Federal St., Boston, Mass.
1001 Jefferson Standard Bldg., Greensboro, N. C.

PATENTS
PAUL B. EATON
Registered Patent Attorney, 1408-C, Johnston Bldg.
CHARLOTTE, NORTH CAROLINA
A former member of the Examining Corps
United States Patent Office
Also: McLACHLEN BLDG., WASHINGTON, D. C.

occurrences and suggest to our minds that many others are approaching the same condition. There are many others that are not now handicapped in this way but a continuation of their losses may be expected to bring them to the point of financial embarrassment. Since many are waiting for a return of more normal general conditions before attempting any improvements, it may be helpful to consider the experience of mills that were the first to see their profits disappear and many years ago were forced to decide on a definite plan of action. A few were aggressive and have steadily improved their status whereas many others adopted the attitude that is more prevalent today and have dropped back or are now entirely out of the picture. Let us assume for purposes of comparison, two mills of 30,000 spindles each, making print cloths but with a difference of seven cents per pound in their total manufacturing costs. Such differences are known to exist and if we assume also full time single shift operation of both units we find that the high cost mill will spend approximately $125,000.00 more to produce about the same poundage, or about 25 per cent of the total value of the annual output when figured at current prices. The possibilities for the high cost mill are obvious and it would seem imperative that they should not delay the expenditure of any reasonable sum of money that would enable them to overcome this handicap.

While this may be taken as an extreme case, we will find that there are many others that are just a little better off. There is one feature of the present business depression that is different from past depressions. Money is plentiful and at low rates of interest, but it is being loaned with the utmost caution and it is necessary to demonstrate the soundness of any plan for which it is to be used before it is available. Depending entirely on a careful survey of the problem of a particular mill, it would appear that conservatism would be on the side of the mill that will aggressively undertake to qualify for operation according to the new high standards of operating efficiency being obtained by the leading mills.

Recently a leading mill executive commented that if his mills had always been operated as they are now they would have made him so much money he would not know what to do with it. He added that they had not been profitable and were not now. Many others could truthfully make similar statements, which can only emphasize the fact that the entire industry has progressed and that before profitable operation can be expected they must make more rapid progress than is being made by the industry as a whole and since the pace of the entire industry has been quickened the need is more imperative than ever.

I have attempted to show in a general way the significance of recent important developments and the differences that are reflected in extreme variations in total manufacturing costs. It is not natural that this will continue indefinitely and it may be safely assumed that we shall again have uniformity, but at lower levels than those prevailing today. The race for supremacy is on and the outcome will depend on the men and machinery of the industry. Both are available to an extent and of a caliber that has never before been known.

PIONEER BRAND

QUALITY PICKER STICKS

To Be Manufactured by Country's Largest Producer of Southern Hardwoods

The Pearl River Valley Lumber Company, Canton, Mississippi, announces the purchase of the picker stick business of the Pioneer Pole & Shaft Company, Memphis, Tennessee. The new owners assure the same quality and manufacture attained in the past and ask the continued patronage of the textile trade.

"PIONEER" picker sticks have long been famous for endurance qualities. The Pearl River Valley Lumber Company owns, and operates in, hardwood timber tracts sufficient for 20 years continuous production. HICKORY for picker stick manufacture is cut from their own timber. Users of "PIONEER" sticks are assured long-time, continuous supplies of uniform quality.

"PIONEER" former production department has been maintained intact. Picker stick orders will be manufactured by the same staff as formerly.

Quality picker sticks are cheapest in the long run. If you are not already using "PIONEER" sticks your inquiries and orders are sincerely solicited.

PEARL RIVER VALLEY LUMBER COMPANY

Hickory Products Division

CANTON, MISSISSIPPI

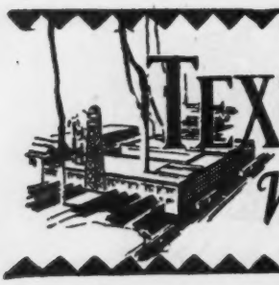
PLATT'S
METALLIC
CARD CLOTHING
AND
SERRATED WIRES
Greater output, stronger thread and more regularity are just a few of the features that make Platt's Clothing pay for itself in such a short time.
NO GRINDING
NO STRIPPING

PLATT FRERES,
BOULEVARD DE LYON, ROUBAIX, FRANCE

Platt's Metallic Card Clothing Co.

P. O. BOX 407, LEXINGTON, N. C.

J. W. & H. Platt, Byron Works, Bouverie Rd., Harrow, England
Other Continental Branches in ROUEN, GHENT, BALE, MULHOUSE BARCELONA, TORINO, Etc.



TEXTILE BOOKLETS *Worth Writing For!*

The booklets or catalogs briefly mentioned below may be obtained by any reader of COTTON who will write to the Company issuing them or to COTTON, Grant Bldg., Atlanta, Ga.

1. Cotton Picking, Carding and Spinning—Covered by three different catalogs. Picking catalog covers Opening and Picking Machinery; Card Room catalog covers Cards, Combers and Roving Frames; Yarn Machinery catalog covers Spinning, Twisting, Spooling, Quilling and Reeling. By Whitin Machine Works, Whitinsville, Mass.

2. Pepperell Equipment—10 page illustrated booklet, showing High Speed Warping from cones as adopted by Pepperell Manufacturing Company after thorough experiments. Installation and product photographs. Issued by Universal Winding Company, Boston, Mass.

3. Modern Practice in Textile Wet Finishing (Slack Loop System)—Practical discussions, various methods bleaching, covering batch, semi-continuous, fully continuous for cotton, rayons and mixtures. Request must be on mill letterhead. By Rodney Hunt Machine Co., Orange, Mass.

4. New Methods of Opening Cotton, also "Brown" Automatic Mixing and Cleaning Distributor—Illustrated booklets showing advantages of Centrif-Air Cotton Cleaning System. Pamphlets also on better picking and carding and pneumatic trunk line cleaner. Issued by Centrif-Air Machine Company, Atlanta, Ga.

5. The Bahnson Master Control—Bulletin No. 801, 5 pages. Illustrated. Automatic device designed to control humidifying equipment so as to maintain a constant relative humidity. By the Bahnson Company, Winston-Salem, N. C.

6. "Textile Brushes"—10 page booklet illustrating brushes for cleaning every part of mill. By Gastonia Brush Co., Gastonia, N. C.

9. "Custom-Built" Motors—Complete set of bulletins covering various types of electric motors for textile master mechanics and executives. By Louis Allis Company, Milwaukee, Wis.

10. Leathers, Textile—Booklet No. 101. 48 pages. Illustrated. Showing BONDARON Check Straps—Lug Straps—Harness Straps—Pickers—Belting, both round and flat, etc. Horsepower tables and other interesting information. By Charles Bond Company, 617 Arch Street, Philadelphia, Pa.

11. Whitinsville Rings—16 page illustrated booklet. Describing ring manufacture, measurements, types, uses. How to determine flange sizes. By Whitinsville Spinning Ring Co., Whitinsville, Mass.

12-A—Instruction Manual for Type K Bobbin Cleaner. Also Instruction Manual for Utsman Bobbin Cleaner—two separate booklets describing adjustments of machines outlined, and also describing effect of bobbin shapes upon the cleaning process. These booklets intended for users of machines outlined. Applicants should designate which booklet is desired. By the Terrell Machine Company, Charlotte, N. C.

12-B—Instruction Manual for the Termaco Roving Bobbin Cleaner—booklet in four sections on adjustment of machine; on how to use machine to best advantage in reducing waste and saving labor; parts catalog; description of new attachments which can be applied to earlier models of the machine. By the Terrell Machine Company, Charlotte, N. C.

13-A—Equipping Modern Textile Plants—Booklet, 35 pages, illustrated. Describes value of Monel Metal equipment in textile plants and presents reports from mill owners and operators on actual experiences; equipment, descriptions, etc. Also Dyed in the Truth—Reprints of advertisements of special interest to textile dyers. International Nickel Company, Inc., 67 Wall Street, New York, N. Y.

15. The Powers System of Thermostatic Control—"Slasher Room is Bottle-Neck of Textile Mill." 18 page illustrated booklet showing importance of proper treatment of cloth in slasher room and advantages of Thermostat over hand control. Also room temperature control illustrations. Issued by Powers Regulator Co., 2789 Greenview Ave., Chicago, Ill.

17. Arcy—12 page booklet on getting most value from starch in warp sizing and cloth finishing. By Drake Corporation, Norfolk, Va.

18. Popular Industrial Chemistry—162-page handbook for dyers, chemists, finishers, purchasing agents. By Kali Manufacturing Company, 1404 No. Front St., Philadelphia, Pa.

19. Quaker City Chemical Co.—48-page booklet containing useful information, tables, formulae, on dyeing, bleaching and finishing all textiles. Issued by above company, 2736 North Broad Street, Philadelphia, Pa.

20. Bleaching, Dyeing, Finishing and Printing Textile Goods—70-page booklet containing interesting information on faults and methods in finishing goods, useful tables and definitions. By Bosson & Lane, Atlantic, Mass.

21. Warp Sizing and Composition of Cotton—Folder containing reprints of articles carried by textile publications of interest to progressive mill superintendents. By Seydel-Wooley Co., 748 Rice St., Atlanta, Ga.

22. Tragasol and Its Uses—Booklet, 60 pages, constituents and properties—Dissolving and preparation—sizing and dressing of yarns—cloth finishing—miscellaneous. By John P. Marsten Co., 247 Atlantic Ave., Boston, Mass.

23. Practice of Rayon Sizing in American Mills, Raygomm, Lakoe Gum—Three booklets on products for sizing and finishing rayon and other textiles, presented by Stein Hall & Co., Inc., 285 Madison Ave., New York, N. Y.

24. Wyandotte in the Textile Mill—90-page booklet with information on bleaching, dyeing all textiles, including hosiery.—J. B. Ford Co., Wyandotte, Mich.

25. "Lupogum" and "Monopole Oil"—Two booklets on textile sizing and finishing products. Jacques Wolf & Company, Passaic, N. J.

27. The Seven Factors of Belting Economy—Booklet, 112 pages, illustrated, containing authoritative information on the economical layout, care and operation of belt drives. Chas. A. Schieren Company, 33 Ferry Street, New York City.

28. Akron Belting—Practical rules and general information for users of belting with belting catalog. By Akron Belting Co., Akron, Ohio.

29. Continuous Card Stripper—A 20 page booklet describing in detail continuous card strippers, their advantages, the power required to operate, etc. Saco-Lowell Shops, 147 Milk St., Boston, Mass.

30. Lubrication of Textile Machinery—32 pages, illustrated. Data covering the economical lubrication of all textile machines. New York and New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

31—Canvas Baskets and Trucks. Doff boxes, trucks and for all textile uses. By Rockweave Mills, LaGrange, Ga.

38. Sleaziness in Full Fashioned Knitting—Illustrated survey with samples of fabric showing causes of sleaziness, and methods to be employed in eliminating it.—By Textile Machine Works, Reading, Pa. (This company also issues parts catalog for Reading full fashioned machine with general information on subject of full fashioned knitting.)

39. Trend of Sales of Silk, Rayon and Cotton in the Piece Goods Departments; twenty-four-page booklet; prepared by DuPont Rayon Company in conjunction with National Retail Dry Goods Association. Copy furnished without charge by either of above. DuPont Rayon Co., 350 Fifth Ave., New York, N. Y.

41. Budget Control—40-page booklet showing how each part of business budget should be prepared and principles of its effective operation together with a summary of benefits.—by Ernst & Ernst, accountants, 27 Cedar Street, New York, N. Y. (This company also has available booklets on Standard Costs, Business Control Through Analysis, The Better Wage, Factors to Consider in Working Out Mergers.)

42. Textiles and the Telephone Typewriter—6 page booklet on telephone typewriter service for communication between mills and selling houses. By American Tel. and Tel. Co., Long Lines Department, Atlanta, Ga.

43. Pornitz Vacuum Bleaching Apparatus—showing the many advantages of this system for bleaching, including the saving of time, saving in chemicals, saving in the transport of material from one apparatus to another, etc. H. H. Leonard, 475 Fifth Ave., New York, N. Y

44. Points of Interest in and Around Atlanta—36 pages. Illustrated, describing places of scenic and historic interest in Atlanta in particular, and the Southeast in general. Atlanta Biltmore Hotel. West Peachtree, Fifth, Sixth & Cypress Sts., Atlanta, Ga.

45. Fidelity Universal Ribbers—a forty-eight page booklet showing the advantages and many styles of ribbed fabric and describing in detail and illustrating the latest developments in ribbers. Sent free on request by Fidelity Machine Co., 3908 Frankford Ave., Philadelphia, Pa.

46. Mundet's New Black Book—Including specifications for the installation of cork pipe covering under various conditions, telling how thick the insulation should be, listing the sundries that are needed with cork pipe covering—showing what to do when pipes are close together, explaining how to order, prices, etc. Copy sent free to anyone interested in cork pipe insulation. L. Mundet and Son, Inc., 461 Eighth Avenue, New York, N. Y.

47 The New Hartmann Spinning Process for Cotton Yarns—showing how with the Hartmann Ring Spinning Frame with combined drafting, it is possible to produce finished yarns in one operation direct from the untwisted sliver of the drawing frame. H. H. Leonard, 475 Fifth Ave., New York, N. Y.

49. Pornitz Hosiery Dyeing Machines—giving details of machine, its many advantages and showing typical installations. H. H. Leonard, 475 Fifth Ave., New York, N. Y.

50. The Effect of Belt Tensions on the Cost of Belting—a 12-page booklet, giving a non-technical explanation of belt tensions, the coefficient of friction of various kinds of belts, the effect of belt tension on belt costs, and the proper care of belting to assure long life and low costs. Sent free on request. Chas. A. Schieren Co., 80 Ferry St, New York, N Y.

51. Pornitz Vacuum Steaming and Conditioning Machines—for fixing the twist in the yarn and restoring to the material the natural degree of moisture which has been lost during the spinning process H. H. Leonard, 475 Fifth Ave., New York, N. Y.

52. The Lincoln Twin Disc Floor Machine—showing the many advantages of clean, sanitary floors, the saving in time and labor through using floor cleaning machines and describing in detail the various models of Lincoln floor machines. Lincoln-Schlueter Floor Machinery Co., 218 W. Grand Ave., Chicago, Ill.

53. Anchor Fencing Service—a 24-page booklet showing various classes and types of chain link and iron fences and gates for industrial purposes. Anchor Post Fence Co., Eastern Ave. and Kane St., Baltimore, Md.

54. Shipper's Handy Helper—A forty-eight page booklet giving valuable information on shipping problems, including suggestions on packing, marking, numbering and invoicing shipments, and describing the principal items generally used in shipping departments. Southern Shippers Supply Co., 113 Courtland St., S.E. Atlanta, Ga.

Knitting Section

Lace tops, lace tops . . . the hosiery cry of the day! And again, the Model "K" is the answer. Once more this famous machine jumps into a market breach with a timely new development . . . attractive fancy welts with lace and colored stripes, and a picot in color or self.

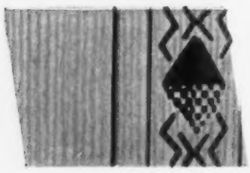
And remember the other Model "K" features which give your product distinction and sales leadership in the face of trying competition . . . the exclusive "Gussetoe", the Cuban tapered heel, fancy clocks, and the cradle foot.

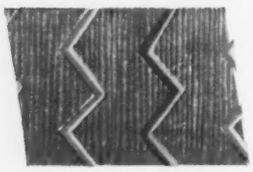
SCOTT & WILLIAMS, INC. · 366 BROADWAY, NEW YORK, N. Y. · ESTABLISHED 1865

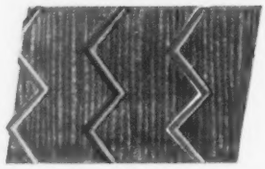
STANDARD "L"

STANDARD TRUMP

DESIGNED FOR THE MANUFACTURER WHO IS WORKING FOR HIMSELF



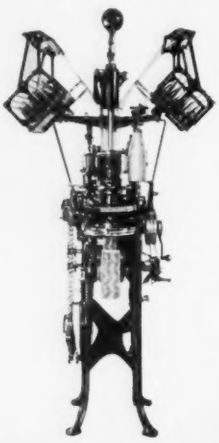


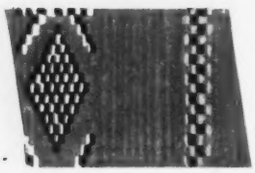


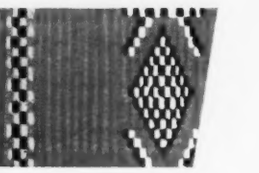
In a market glutted with conventionally patterned, price-competing hosiery, the only real profit is to rise above this average, to produce hose of such unusual, attractive patterns that it commands *your* price at *your* fair profit.

¶ Anybody can make money when everybody is making money; the shrewd, smart manufacturer is ever alert... quick to adjust himself to conditions as they *are* —not as they once were or may be.

¶ Standard "L" is the machine for the manufacturer who recognizes today's call for better hose at a price that gives him a legitimate profit—that puts him back to work for himself.







STANDARD-TRUMP BROS. MACHINE COMPANY, INC.

366 BROADWAY, NEW YORK, N. Y.

Survey of Seamless Hosiery Planned

Investigation to be made and reports to be sent only to those participating; news about full-fashioned industry

HOSIERY INTERESTS regard it an encouraging sign for the near future of the industry at large that there are under way or in prospect studies of basic facts at the bottom of the causes for prolonged continuation of conditions which it is expected may be remedied after an analysis of searching inquiries by persons competent to deal with the facts.

Manufacturers who contributed to the information for a hasty study of stocks of full-fashioned hosiery as of late June have received copies of reports of a survey by Dr. George W. Taylor of the research department of the University of Pennsylvania. Differing from the procedure of previous hosiery market and production surveys by Dr. Taylor, it was decided to confine distribution of the information which he compiled to only those who contributed to it. When it might be made available to the trade press had not been determined when the reports were mailed to mill executives entitled, under the plan, to receive them.

Late this year, it is the purpose of Dr. Taylor, in consonance with the expressed desires of circular machine interests, to conduct a survey of the seamless hosiery equipment in place, the production of hosiery by classification and present the results of a study of the growth of the seamless industry to the stage where it began to be seriously affected by the expansion of the production of and markets for women's full-fashioned hosiery. Dr. Taylor said he could not at this writing indicate even approximately when the seamless hosiery survey would be completed, but he thought the work might be out of the way late in 1931.

An inquiry of prime importance in particular to manufacturers operating full - fashioned hosiery plants is that which was tentatively authorized at a meeting of the Directors of the National Association of Hosiery and Underwear Manufacturers in New York on June 22, when a committee authorized to take the initial steps for a thorough inquiry was formed which consisted of John Nash McCullaugh, general manager of the Berkshire Knitting Mills, chairman; Carl S. Kincaid, president, the Magnet Mills, Inc., Clinton, Tenn.; and Ernest Blood, president John Blood & Co., Inc., Philadelphia.

From members of the Association who are not members of the committee it is gathered that, if the inquiry be undertaken—which is to say, if a sufficient fund is provided—it will be conducted by a nationally known corporation of public accountants familiar with the details of hosiery industry cost finding and the wage scales applying to the various departments.

"What the full-fashioned industry in particular wants," said a mill manager, "is a knowledge of prevailing wage scales in the various knitting centers, in order that guesswork may be eliminated and manufacturers can, when occasion requires, go before the public with the facts and move intelligently in the direction of adapting wage scales to conditions in the several pivotal industrial sections. And the inquiry is intended to cover both the full-fashioned and seamless industries," the managing executive added, "it should prove of vital importance to both in getting out of the slough of depression, for a good start toward normal conditions in 1932.

While there has been suggested a wage study in the cotton underwear industry similar to that proposed for the hosiery industry, it may be, said a person speaking for underwear interests, "that we acted wisely in deciding not to merge with the hosiery association, as now there can be no clash when one or the other body wants action for its exclusive benefit, such as a wage study."

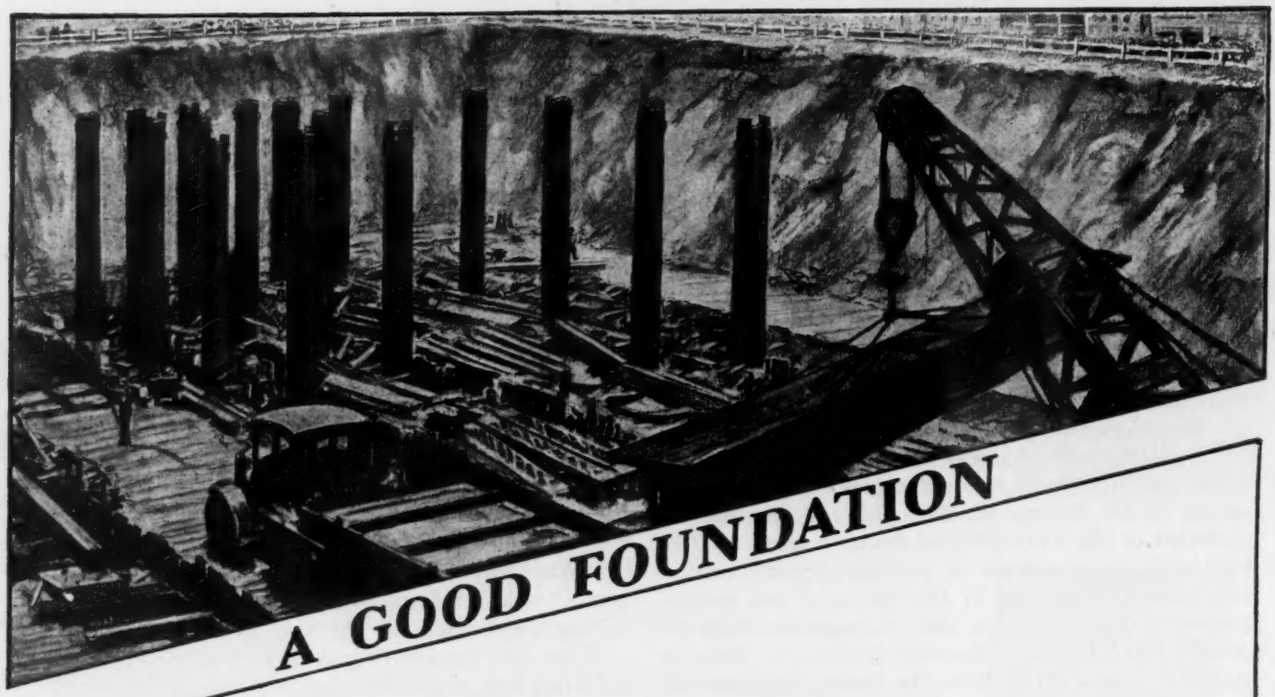
The proposal of a merger of the two associations was originally and formally considered in the annual convention of the National Association of Hosiery and Underwear Manufacturers in April last. It was recently discussed by committees of this association and the Associated Knit Underwear Manufacturers of America, and the adverse action taken.

Confusion in Hosiery Trades Over Alleged Infringment of Patents . . . . . .

CONFUSION over claims of owners of patents issued covering certain features in construction of hosiery, in conjunction with litigation on the ground of alleged infringement and threatened action in the courts on a variety of charges, have given manufacturers no little concern for the safety of some of their recent creations. First to receive widespread attention was the warning issued by the Berkshire and Ajax mills that they would protect their rights in a lace hem construction of the Ajax, which sold an interest to the Berkshire. Then came the threatened suit of Strahan & Co. for damages in amount of $1,000,000 against the two mills on the ground their notice to the trade was improperly issued in that the patent claimed by the mills could not be valid, and that the Strahan mill lost business by reason of the alarm over the warning of the Berkshire and Ajax.

Gotham Hosiery Mills soon had possibly a half dozen suits filed on the ground of alleged infringement of the Gotham's Adjustables patent. While the suits naming several mills and important retailer as defenders against the Gotham were still a sensation, numbers of full-fashioned hosiery manufacturers received a warning letter from J. William Terrey, of Sherbrooke, Quebec, claiming he was the originator of the cradle foot and crescent foot on hosiery; that he had pending an application for a patent, and that "manufacturing this style of hosiery without authority from him would constitute an infringement of his patent". He referred manufacturers to his attorneys, Lucke & Smith, Philadelphia, and many recipients of his letter promptly got in communication with their attorneys.

While Lucke & Smith state that there could be no infringement of Terrey's pending application, since no patent has issued to him, there are intimations that complications might be possible, as their client has a patent which may have some bearing on the rights for which he is asking for a patent under application acknowledged by formal serial No. 457583.

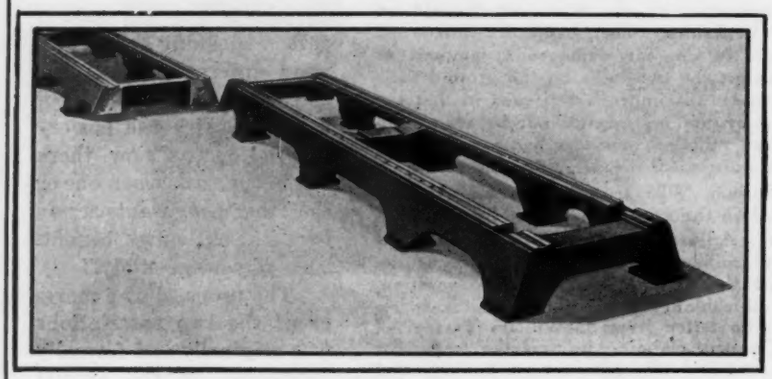


A GOOD FOUNDATION

The new Wildman Full-Fashioned Hosiery Machine has been built *right*, from the ground up. The *heavy base* upon which the legs rest is one of the principal factors in the elimination of vibration and its accompanying dangers.

Write for further information

**Wildman Mfg. Co., Full-Fashioned Division,
Norristown, Pa.**



WILDMAN
THE WORLD'S STANDARD

WILDMAN

FULL-FASHIONED HOSIERY MACHINE

Signature Hosiery Co. To Liquidate

Assets of Schletter & Zander Concern Authorized by Stockholders to be Sold.—Accountant Made Controller and Treasurer of William Brown Co.

THE PREFERRED STOCKHOLDERS of Schletter & Zander, Inc., Philadelphia, well known in New York and Philadelphia as manufacturers of high-grade full-fashioned hosiery for women, on June 13 voted authority to the directors of the company to liquidate the assets. This followed similar action by the owners of the common stock, both groups of stockholders recording their authorization during the absence of the principals in the corporation. Richard Schletter, the president, was reported at his office as out of the city indefinitely, another informant stating he was in Europe on vacation. W. E. Zander, the treasurer, could not be reached at either his home or office when it was sought to learn something of the manner in which liquidation would be conducted. The trade was interested in the question as to what disposition would be made of the knitting equipment, said to embrace modern machines of the more modern types. It is stated unofficially that the company operated a battery of around 110 full-fashioned machines. The company until somewhat recently sold its product through Brown Durell Co.

Schletter & Zander was incorporated nine years ago. The name of the concern was changed last year, soon after the corporation parted company with Brown Durell Co., and since operated as the Signature Hosiery Co.

Announcement is made by Charles Lehmuth, Inc., that it has purchased all of the equipment of the Majestic Hosiery Co., Philadelphia, and will operate it in Glassboro, N. J., 19 miles from Philadelphia. The Majestic was incorporated for $150,000 and manufactured full-fashioned hosiery. Mr. Lehmuth formerly operated the mill of the Henry Lehmuth Co. estate and sold it to John K. Voehringer, now of Mock, Judson Voehringer Co., Greensboro, N. C. Mr. Voehringer sold the mill to the Phoenix Hosiery Co., Milwaukee, by whom it is operated as a separate unit. With the removal of the Majestic Mill and liquidation of the Signature Hosiery Co., Philadelphia, it is pointed out, will lose two full-fashioned plants.

Controller and Treasurer Elected for William Brown Co.

William A. Long, a public accountant, was recently elected treasurer of the William Brown Co., Philadelphia, manufacturer of Granite brand full-fashioned hosiery, succeeding James J. Sullivan, Jr., a son of the late president of the company. Mr. Long for some little time previous to assuming the treasurership, was controller of the mill, for which he had conducted a thorough audit. Thus an accountant, whose knowledge of the conduct of a hosiery mill business was obtained chiefly through audits of mill books and accounts, becomes absolute manager of one of the old-time Philadelphia plants, operated for years by practical hosiers. Controller Long reports the William Brown mill well engaged on orders and recently completing its program for the fall campaign.

A report from the Windsor Mill, Inc., Philadelphia, virtually idle for some months, would liquidate, is denied by the president, Thomas H. Brown. The mill sells to retailers direct. Commenting on hosiery market conditions, the management thought it was fortunate in not operating during the last few months.

The Apex Hosiery Co. found it expedient to deny a report it was selling to retailers. Several jobbers were hesitating to place orders because, they said, they were averse to dealing with manufacturers distributing any part of their product through the retail trade. "Since starting the mill business nearly 30 years ago," says the sales manager, "we have distributed through the jobbing trade exclusively and will so continue. We believe the jobber has an established position in the distribution of hosiery and will be stronger in that position after the chaotic conditions now existing in the trade have undergone that inevitable adjustment."

According to a report from a trustworthy source, the Richmond Hosiery Mills, Rossville, Ga., incorporated around 45 years ago, is establishing itself in the jobbing trade, after selling retailers for many years.

Melting under the heat of the July sun when temperatures were fluctuating in the 90s for a week, a part of the composition roof of a hosiery mill in the Reading area leaked down upon machinery and stock, causing heavy damage.

Figures from a tabulation by the Silk Association of America make it appear doubtful if many of the large manufacturers of silk full-fashioned hosiery operated on the correct turn of the raw silk market for obtaining price advantage, for, the tabulation shows, deliveries of raw to American mills in June, when prices were scraping bottom, were only 42,161 bales. Deliveries during the first three months of 1931 totaled 165,535 bales, compared with 128,590 bales in the second quarter.

Full-Fashioned Survey Notes.

FROM January 1 last to June 30 the character of the stocks of full-fashioned hosiery listed as in mills changed decidedly, stocks of tram silk having been moved into distribution. This is indicated in a preliminary report of a survey of hosiery stocks made by the Industrial Research Department of the University of Pennsylvania in co-operation with the National Association of Hosiery and Underwear manufacturers.

The report is based upon reports of establishments which reported stocks on January 1 and again on June 30, reports of others being not included in the totals, from which the following percentages were figured for comparison:

"Establishments reporting as of January 1, 1931, declared stock of 2,444,700 dozen pairs. The same establishments reported 1,962,424 dozen pairs as of June 30, a decrease of 8.5 per cent.

"These establishments reported a slight improvement in unfilled orders in relation to stock. On January 1 stock on hand was 'covered' by 33 per cent of unfilled orders; on June 30, by 34.7 per cent. While the total of unfilled orders declined, stock decreased at a faster rate.

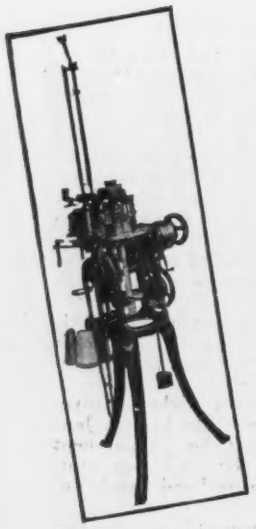
"A notable improvement occurred in obsolete numbers and irregulars. On January 1st, 10.6 per cent of the stock was obsolete or irregular; on June 30th, 8.5 per cent of a smaller stock, so that the irregulars in stock are much less in absolute amounts.

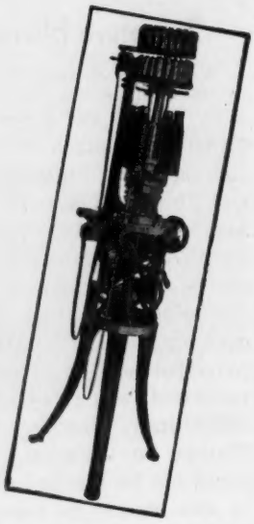
"On January 1st, 61.2 per cent of the stocks were tram silk and 27.9 per cent were hard twist. On June 30th only 38.3 per cent of the stocks were tram and 61 per cent were hard twist. During the past six months, the tram stocks have been moved."

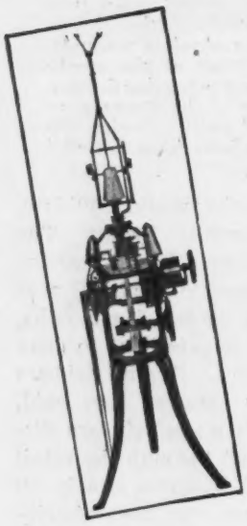
◆ ◆

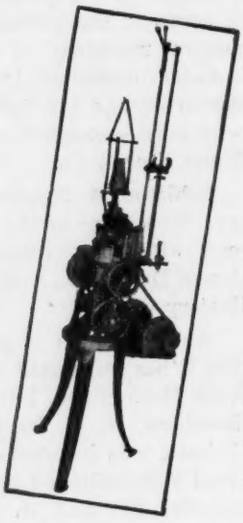
ALL TRUE-RIB

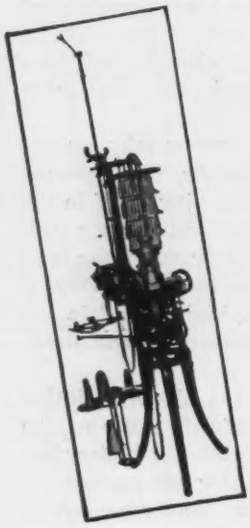
(Patented or patent pending)

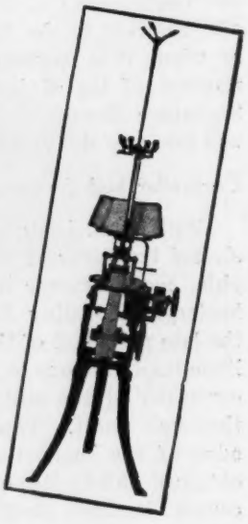


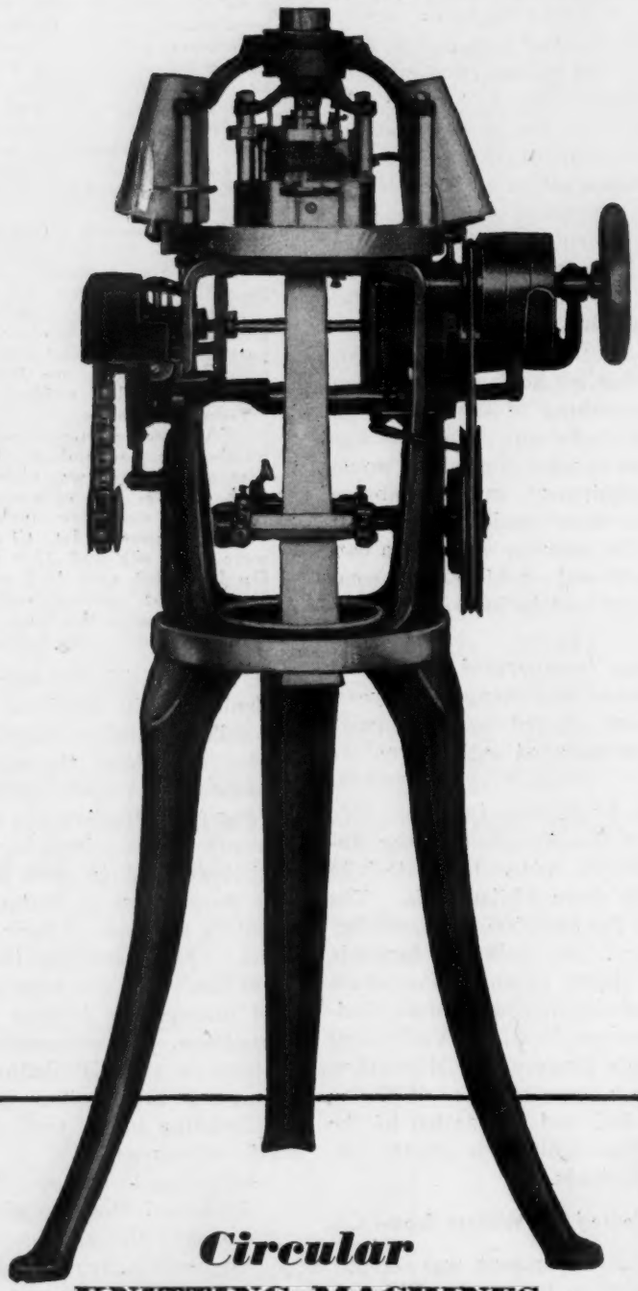












Circular

KNITTING MACHINES
BRAIDING MACHINES
CREASING MACHINES

FIDELITY MACHINE CO.
3908-18 Frankford Avenue
PHILADELPHIA, PA.

THE FIDELITY UNIVERSAL RIBBER

Yarn for Topper Courses.

Some varying opinions as to the best practice in making the topper course on a 42-gauge number.

EDITOR COTTON:

Your "CONTRIBUTOR NO. 4987" has asked for discussion as to the best yarn to use for the French lip topper course on 42-gauge full-fashioned stockings. I would say that the solution of this problem lies entirely in the type of stocking which the inquirer is manufacturing. Ordinarily, where a stocking is mercerized top, the easiest method of making the ravel courses is to use the same yarn finger employed in making the top for making the ravel courses. Again, if the stocking is silk top with cotton on the inside of the hem, I would advise using the yarn finger employed to put the yarn on the inside of the hem.

If the construction of the stocking being made is of such a nature as to leave an idle yarn carrier, or rather if the machine on which the stocking is being made has sufficient carrier to produce all the desired features on the stocking and still leave an idle carrier, I would advise that such carrier be used for the exclusive purpose of producing topper ravel courses. In this way an ordinary single or two-ply natural yarn may be employed for the purpose, which would be slightly cheaper than using mercerized yarn. Best results will be obtained when the ravel courses are relatively of the same stitch construction as the silk fabric of the stocking being made. It is understood that if a heavy thread is thrown in at this point, causing the ravel courses to be tightly knit, that it will not only give trouble in raveling but will produce a heavy-loaded condition on the needles, which at best will not do them any good. On the other hand, if a yarn of too light a count is used, producing flimsy, sleazy ravel courses, this too will give trouble in raveling. So the question logically resolves itself into one of using yarn for making ravel courses that will be best suited to the construction of the stocking being made, whether it be a 5-thread or a 10-thread, etc.

In addition to these explanations comes the individual attitude of the inquirer as associated with the type of machinery he is using and his local organization. If he feels that best results will be obtained by using a certain type of yarn, or his toppers claim that they can get better results with one type of yarn than another, and he feels that the position of his toppers is warranted, then the best type of yarn to use for the purpose is the one that suits local conditions, regardless of what other mills think or are doing, as the advantages or disadvantages in using cotton for making the ravel courses over that of continuing the silk for making the courses, considering the present prices of raw silk, are negligible as compared to a harmonious organization and satisfactory production. However, I have seen ordinary two-ply C. P. yarn in counts from 50s/2 to 80s/2 as well as single C. P. counts from 20s to 30s used with entire satisfaction to all parties concerned.

I do not believe that one particular type or count of yarn can be established as a satisfactory standard for making topper ravel courses for all the different types of hosiery which a 42-gauge manufacturer will be called on to make, even over a six-months' period of time.

CONTRIBUTOR NO. 4995.

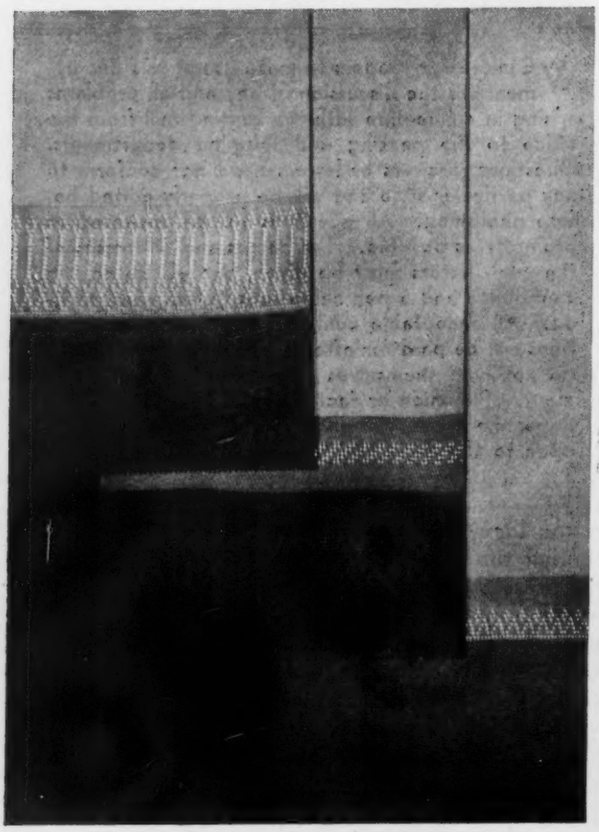
EDITOR COTTON:

Recently "CONTRIBUTOR NO. 4987" asked: "What is the most practical size of yarn to use for the topper courses on a 42-gauge, 7 or 8-thread full-fashioned number? Should this yarn be combed regular twist, mercerized twist, mercerized or mercerized gassed? Considering the price differential in yarn sizes, what number would be the most economical to use in the topper courses?"

In answer, I will say that our experience has always been that of using the same yarn as we employed in the true heel, and while conscious of the slight possibilities of savings due to price differentials, we have always felt that it does not pay to complicate mechanical matters at this point for a few theoretical savings. In cases where the split heel process is used and the same yarn as employed in the split heel (panel

WE invite our readers to make use of this department for the discussion of any and all problems arising in connection with the knitting mill from the office to the packing and shipping departments. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. All questions will be answered as promptly as possible. The names and addresses of the contributors must be given, but will be held in confidence and a pen name substituted when printed. All acceptable contributions other than questions will be paid for after publication. The editors do not hold themselves responsible for any statements of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

BEAUTIFUL *Lace Welts*



with the REINER *universal lace* ATTACHMENT

For the first time with a low priced accessory, the Reiner Universal Lace Attachment provides means for knitting exquisite lace designs in small or all-over effects in both welt and leg.

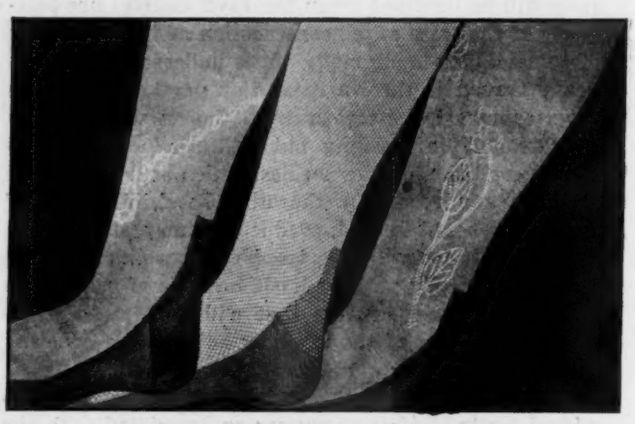
Fits Any Machine

This amazing attachment is not confined for use on Reiner-sponsored machines alone, but is so fundamental in principle, and simple in design that it is now constructed to fit all makes of full fashion machines. It is guaranteed to operate satisfactorily on both old and new equipment.

Very Low Cost

The Reiner Universal Lace Attachment, controlling a single needle, small group of needles or the entire bar, is capable of workmanship which is usually associated only with costly and cumbersome jacquard equipment. Yet this attachment is priced at a figure pleasingly low.

Full particulars of design, operation and price on request.



ROBERT
REINER
INCORPORATED
WEEHAWKEN, N. J. Tel. Union 7-0502
25 MINUTES FROM TIMES SQUARE

EINSIEDEL-REINER
FULL FASHIONED HOSIERY MACHINES

effect) is used for the true heel, we recommend using the same yarn as used in the boot, and with the same carrier. If another yarn is used for the true heel, we would then use it, whatever it might be. As for the qualities of the various yarns, it matters little, and if a manufacturer is using a specific yarn for the ravel course, the cheapest is the best if it is of standard quality for its classification. If there is a determination to save, perhaps the number of ravel courses can be cut down. In this case it might be that they are using too many. We consider twelve as the ultimate for high quality work, and we can decrease according to the stocking we are making. Skilled workers may get by on eight ravel courses, in fact they prefer having the yarn easy to grasp, and the lower the count, the easier to grasp.

CONTRIBUTOR NO. 5003.

EDITOR COTTON:

I note that "CONTRIBUTOR NO. 4987" wishes to secure information as to the most practical size of yarn to use for topper courses on a 42-gauge legger making a 7-thread or 8-thread stocking. He also asks what kind of yarn should be used.

In using cotton for topper courses one must always remember that this yarn is waste and therefore a costly yarn should never be used. The yarn, however, can sometimes be too cheap and the result is that when one tries to knit these courses the yarn will break, causing a press-off, or will make holes in the topper courses. This is false economy and therefore I recommended that only yarns that will make courses without trouble be used.

It is not necessary to use one size yarn for topping courses, and in a 7-thread or 8-thread stocking, sizes such as 60s/2, 70s/2 or 80s/2 can be used. In any mill there are always some odds and ends of cotton that one does not know how to use up and this is one place where these odds and ends can be used. The method I have always used for yarn for topping courses is to re-wind the small cones taken down by the knitters, using this yarn for the topping courses. I do not let the knitters run the cotton down too close and I find this saves press-offs, as many press-offs are caused by the yarn catching to the cone when one tries to run off all the cotton on a cone. Through this method I do not only save press-offs but also am able to use all the cotton yarn on each cone, and the cost of re-winding is small in comparison to the savings made in waste.

If one does not wish to use this method, however, and wishes to use what is called regular yarn, I would suggest that for a 42-gauge 7-thread or 8-thread stocking, a 70s/2 ply mercerized yarn be used. This yarn does not necessarily need to be gassed but it should be mercerized, otherwise considerable trouble will occur in the knitting of the topper courses.

In making topper courses out of cotton yarn, one should always remember that these courses are wasted and therefore I say to those interested in securing information on the size yarn to use this is one place where yarn, unfit for use in any other part of the stocking can be used for topper courses, so it is not always a question of what size yarn to use. However, judgment should be used in the sizes used for a certain weight stocking and one should see that not too fine or too heavy a size is used, otherwise the saving made would be offset by the damage and waste made through press-offs. However, on a service weight stocking, topper courses can be made with 60s/2, 70s/2, or 80s/2 ply yarn and be assured that the topper courses will be knitted properly without causing press-offs or waste.

C. H. BAXTER.

Loose and Tight Sinker Lines.

This contributor says tallow affords only temporary relief for loose and tight sinker lines.

EDITOR COTTON:

I read with much interest the article in the June issue of COTTON regarding tight and loose sinkers. I would like to give my opinion as to the cause of tight and loose sinker lines, my remarks pertaining strictly to full-fashioned machines.

I cannot make up my mind to agree with "CONTRIRUTOR NO. 4901", whose opinion it is that tallow will eliminate tight and loose sinker lines. I tried tallow a number of years ago when loose and tight sinker lines were of extreme annoyance, and when the average fixer would be afraid to tackle the job in order to eliminate this disagreeable line, whether it was a tight or a loose line. I found, however, that using tallow gave only temporary relief.

It is natural that tallow (a lubricant) is, after all, temporarily filling up the space made by a much abused sinker slot, or a very bad or broken sinker. We must always bear in mind that sinkers will wear, striking jacks will wear, and above all other things, verge plates (or folding bars, as some people call them) also wear. As a matter of fact, it is my opinion that this is one of the most important things to look for when one has sinker lines, for the very definite reason that the verge-plate is brass, it is soft, and is apt to become defective. For instance, when a sinker breaks at the rivets, or the reinforced section of the sinker, the chances are that the knitter will not notice it immediately. The result is an additional pressure on the verge-plate, which will cause it to wear down.

I have seen the time when it was necessary for us to take off verge-plates that had not been in use for two months, and file the whole plate to the level of the indentation before a sinker line could be eliminated. Caution should be taken, however, never to file a verge-plate unless a straight-edge gauge is obtainable. Knitters can save themselves plenty of headaches and heart-aches if they will watch their sinkers very closely, as a broken sinker protrudes from the sinker head about 1/32-inch more than the rest. That is positive proof that the sinker is broken, or that there has been an indentation made in the verge-plate.

I agree with "CONTRIBUTOR NO. 4901" in what he says about there being times when we are too stingy for our own welfare, when we would waste time with poor sinkers, rather than spend a little money for repairs in order to keep the sinkers in first class condition. Long ago I learned not to spare the sinker and spoil the fabric.

The same thing applies to needle lines, and, incidentally, we are often deceived into believing that vertical lines in the fabrics are caused by sinkers or dividers, when they are really being caused by the needles. However, this is a matter for the fixer to determine.

CONTRIBUTOR No. 5059.

Proper Number of Courses.

EDITOR COTTON:

I have read with much interest a question recently published in "KNITTING KINKS" by "CONTRIBUTOR No. 4616" in which he asked about the proper number of courses per inch in a seamless hose.

He stated that there is a difference of opinion among his machinists as to what they consider the proper number of courses per inch in a hose made on a Scott & Williams Model K 3½-inch 260-needle machine, 70s/2 mercerized being used in the hem, 8-thread silk in boot and foot and 80s/2 mercerized in heel and toe.

He also stated that his chief objective, in producing this hose, is to obtain a good appearance in the finished product, and that in order for him to do this it is necessary for him to draw as tight a stitch as possible and still get the required elasticity. I believe that I could have given the inquirer a more comprehensive answer if he had stated what he considers a tight stitch; what courses per inch he is now using in the various parts of these hose; also, the number of chain links he has in each part to get his lengths.

Before answering this question, I would like to state my experience as to how I determine the proper number of courses per inch for seamless numbers from the time the style is originated to the approved specifications of mass production.

There are two types of hosiery manufacturers. One is the manufacturer who places quantity above everything else in order to hold the good will of his trade. The other is the manufacturer who by poor system of regulation, such as specifications of style numbers improperly made, turns out inferior merchandise. This type of manufacturer will also tolerate inspection sys-

SPECIFICATION No. 62

STYLE 460 DATE 4-8-30

PART OF STOCKING	YARNS	LINKS No.	LINKS KIND
SET-UP	2-70/2 D	1	
BACK WELT	1-70/2 D	8	Plain
		1	
FRONT WELT	1-70/2D	12	P.
TOP OF LEG	1-70/2D	1	
BOOT	8-T. S.	53	P.
ANKLE	8-T. S.	15	P.
HIGH SPLICE	1-70/1D	5	P.
ON HEEL		1	
HEEL	2-80/2D Durene	10-1-10	
OFF HEEL		1	
FOOT	8-T. S.	Size	P.
TOE GUARD		1	
TOE	2-80/2D Durene	12-1-12	
OFF TOE		1	
LOOPER TRIM	2-80/2 Durene	2	P.
TOTAL LINKS			

TYPE OF MACHINE Ascott-Williams K. DIAMETER 3½ No. OF NEEDLES 260

PART OF STOCKING	SIZING LENGTH	COURSES PER INCH
WELT BACK		26
WELT FRONT		26
BOOT		40
ANKLE		48
HIGH SPLICE		
FOOT		48
TOE GUARD		
TOE - HEEL		44

SIZE SPECIFICATION FOR FOOT

SIZE	No. LINKS	LENGTHS FOR FOOT
8	11	
8½	13	
9	15	
9½	16	
10	18	
10½	20	
11	22	
11½	24	

Note — Number of links in foot depends upon size being made. Go by the scale.

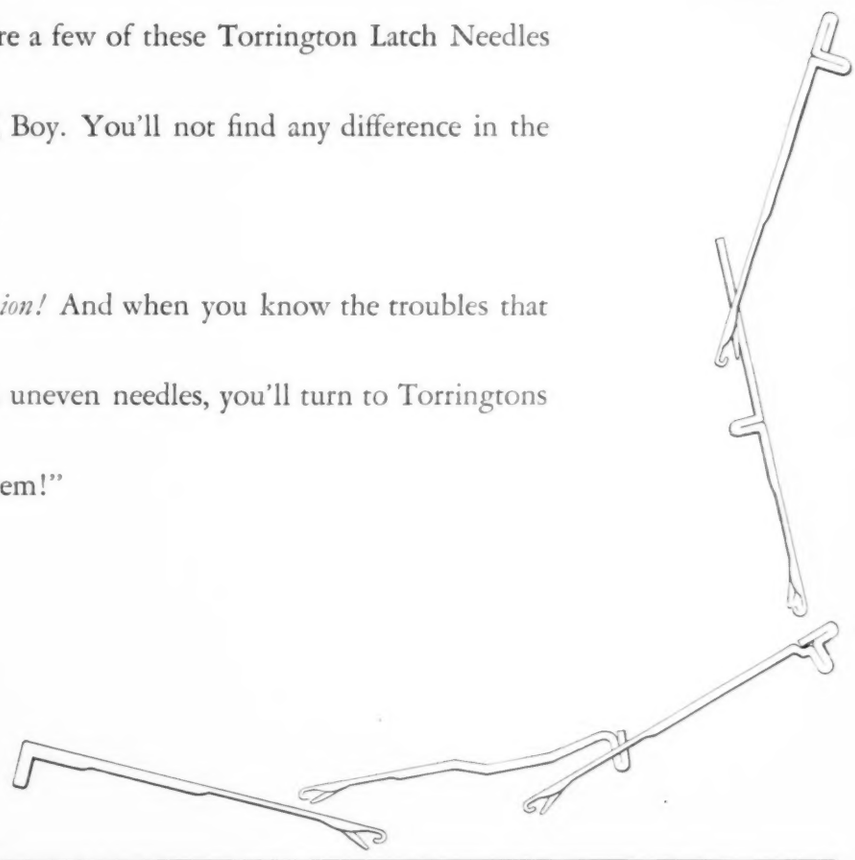
REMARKS:—

The Old Knitter Talks

"JUST measure a few of these Torrington Latch Needles for yourself, Boy. You'll not find any difference in the length of 'em.

"That's *precision!* And when you know the troubles that can come from uneven needles, you'll turn to Torringtons and stick to them!"

The red box with the green label.



TORRINGTON *Latch* NEEDLES

Only a Machine measures Liquids accurately

A handle clicks, and five, ten or fifteen gallons are measured out . . . *exactly.*

Torrington Spring Beard needles "come out" with a like precision . . . mechanically . . . every needle the perfect product of a *machine.* Knitters who know have found this unchanging accuracy in manufacture a source of confidence, year in and year out.

The red box with the green label. Packed 1000 to the box. Each box contains 10 packets of 100 needles wrapped in glazed paper.

The Torrington Company
ESTABLISHED 1866
Torrington, Conn., U.S.A.

BRANCHES:

THE TORRINGTON COMPANY, 1640 FAIRMOUNT AVE., PHILADELPHIA
THE TORRINGTON CO., INC., 140-144 W. 22ND STREET, NEW YORK, N. Y.
LOS FABRICANTES UNIDOS, 964 CALLE BELGRANO, BUENOS AIRES

FACTORIES AT:
TORRINGTON, CONN
UPPER BEDFORD, QUEBEC
COVENTRY, ENGLAND
AACHEN, GERMANY

TORRINGTON
Spring Beard Needles

tems that do not check imperfect production, and he will substitute inferior yarns in order to cut costs.

The running conditions of the machines must be taken into consideration in determining the courses per inch, as extremes one way or the other result in imperfections and this must be avoided.

In determining our style specifications, we first obtain samples of other makes made on the same machine and of the same gauge. This is done where we wish to duplicate a style, or make one somewhat similar. After determining the stitches per inch and the yarns used, we make up a specification as shown in Fig. 1. This specification is what we term a test. You will note that it has all necessary information as to what is wanted.

The knitting department receives this specification with orders to make up a pair of hose according to specification. The machinist who makes these tests is of course skilled in his line, and knows whether or not the courses per inch, as per the specification, is as should be. But, regardless of his opinion, he makes up one pair as called for. At the bottom of the specification the machinist writes his suggestions as to improvement of this test specification. Whether it can be improved upon as to quality, or whether we have gone to extremes, so that if our machines were set up to make them as our test specifications called for we would have a large per cent of imperfections. In most instances, changes are made to the specifications before they are finally approved for production purposes.

We strive to produce hose that not only look well, but wear well. A style that is knit too loose looks shabby, hence we try to avoid that. If the ankles are sleazy, hose do not wear well, and this may be caused by the welts being too tight or loose; by the foot being too tight or loose; or by the heel and toe being loose, which will cause dog ears. Any of these defects will affect the saleability of the yarn.

Naturally, in determining the courses per inch, a great deal depends upon the size and diameter of the machine. As there are all sizes, the style itself is governed accordingly. We have found that no two machinists have the same idea as to what they would call the right method of producing hose. On account of this fact, we have entrusted the working out of these styles to one machinist who knows the machines.

We have been running quite a few machines of the same gauge as those of "CONTRIBUTOR No. 4616", also using the same yarns as those used by him. We have been knitting in the ankle as tightly as is practical from the standpoint of good running conditions, and have found the following courses per inch to give very good results: Ankle, 48; boot, 40; welt, 26; and heel-toe, 44.

Fig. 1 is a specification form which shows our layout for producing this hose, the kind of yarns used in each part, the number of chain links to get the required lengths, the courses per inch in each part and general information. We use this specification form in our tests, and after being approved a permanent copy is made. A copy is kept in the office and one is sent to the heads of each of the departments that have anything to do with production.

CONTRIBUTOR No. 4808.

Looping and Seaming.

Tells of the evils of carelessness in looping and seaming.

EDITOR COTTON:

I believe some people are inclined to give entirely too little attention to looping and seaming. I consider looping the most important operation of all. Why? Because I have seen so many stockings which were okeh on the knitting machine and the operation be entirely successful here, only to be ruined during the looping process.

There are several things that will ruin a stocking on the looper, among which are: bad needles, caused by improper setting in the machine, not centering points, or point being worn off of needle by it being set too low on point brass. When this happens it is very hard to notice, for it will pick up the stitch on the inside of the points and leave the other side off, or split the stitch on the other side, making it very hard to see. Many bad stockings can be made before it is finally found.

Much attention should be paid to cutters or knives. They can give untold trouble by not being set properly or not being sharp enough to cut off clean. If they are too low, they will cause many menders and ruin both point and brass. I do not have much trouble with points breaking out. I have had 22 machines (26 and 28 point) running three years and have not used 100 points on all my machines.

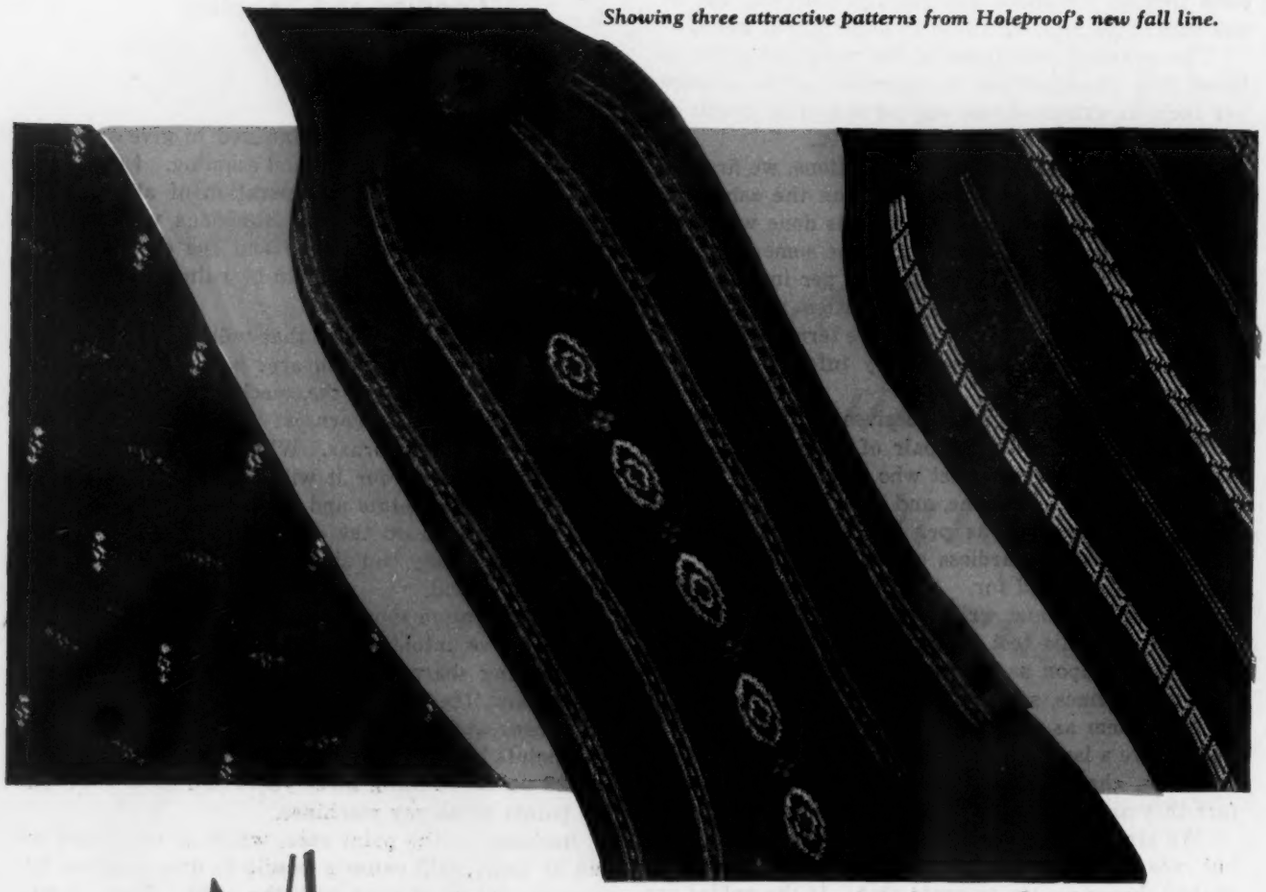
Backslap in the point race, which is very hard to find at times, will cause a needle to drop stitches by throwing it out of time with the point. Thus, it appears to me that there are several things that go together to make looping an operation that requires a great deal of attention.

I also think that seaming requires considerable attention. Anything about a seamer can give plenty of trouble. I agree with a statement made by C. H. BAXTER in one of his recent articles when he said the feed cups could give a lot of trouble. However, that is by no means the only trouble that is encountered here. The needles can give more trouble than any other one thing, because they come in contact with all of the work. A bad needle with the point broken off will cause little holes to come in the work after it has been inspected and finished because the point of the needle will cut only part of the thread, leaving enough to hold it together until a little pressure is applied. This will make a third out of the stocking.

Along this same line, I noticed in the February issue that "CONTRIBUTOR No. 4908" wanted someone to tell him the best kind and size of seaming thread to use for service weight full-fashioned hose. He said that he was using 80s/3. I would say that this thread is all right if it has the right twist in it to keep it from breaking open when forming a loop for the looper to pick up. I think 80s/3 should have about 18 turns per inch of left hand twist in it.

"CONTRIBUTOR No. 4908" said that he is having quite a bit of trouble with drop stitches on the seam. I would say that his trouble is in the setting up of the machine. A needle is probably not set properly to give the right loop for the looper to pick up, or the

Showing three attractive patterns from Holeproof's new fall line.



When HOLEPROOF says, "OK"

. . . *it means* hosiery production *on a basis of* SALES LEADERSHIP

Holeproof Hosiery Company has said "O. K." to orders for Banner Wrap Stripe Machines five times in the last three years. Holeproof's first order was placed in 1928. Since then, operating successes have caused the installation of *four re-orders of these machines.* Nothing could so well prove the exclusive merits of these Banner machines as the successful sales results achieved by this leading mill of international reputation.

HEMPHILL COMPANY, PAWTUCKET, R. I.

General Sales Office and Machine Exhibit, 93 Worth St., New York, N. Y.
Philadelphia, 215 South Broad St. High Point, Commercial Bank Bldg.
Chattanooga, James Building

BANNER WRAP STRIPE MACHINES

knit a perfectly plated body fabric with any yarns or combinations.
- they have all the color changes and steps that are ever required for practical patterning.
- they provide for color change in every vertical, if desired.
- they provide for pattern change in less than half the time required on any other machines of the same type.
- they are backed by more than three years successful mill experience.

looper is set too high from the needle. A looper should be set as low as possible without touching the needle as it passes by to pick up the loop. If the looper strikes the needle when it passes it will make a burr in the slot of the needle, holding the thread in the slot, and will not make a loop, thus causing drop stitches.

Too much tension on the needle thread will cause the thread to open up when the needle is forming the loop for the looper to pick up.

CONTRIBUTOR No. 5000.

Formula and Method for Bleaching Knit Goods.

We recently received the following inquiry from one of our correspondents:

"I would like to know a good process for obtaining a white on cotton tubular knit goods on the Rodney Hunt machine. At the present time I am using sodium bisulphite as a neutralizer for the sodium hypochlorite after bleaching. Would acid be better? What is a good blueing for fastness to storage? Is a scour of 2 per cent pine oil and 2 per cent soda ash at the boil for one hour sufficient?

"The entire procedure of scouring, washing and bleaching is run on the one machine. By a wash I mean about 5 minutes running on the machine. There is no mechanical means other than just running the goods on the machine for a good rinse.

"Our procedure is as follows: Scour, 2 per cent caustic soda and 2 per cent pine oil at a boil for one hour; the goods rinsed once at 140 degrees F. and once in a cold bath; the bleach is carried on for 1½ hours at 100 degrees F., using 8 quarts per 100 pounds material of sodium hypochlorite (16.5 per cent av.Cl.)—the material is kept moving in this bleach; the goods are next washed for 5 minutes in a cold bath, after which they are neutralized for 10 minutes in a new bath with one pound of sodium bisulphite per 100 pounds of material; and next they are washed once at 140 degrees F., then once in a cold bath and removed. (We note an odor to the goods while drying—would an acid wash remove this?)

"Our Rodney Hunt machines hold about 400 pounds of cotton or 15 strings of knit goods (110 yards in length). In bleaching we use a liquor about 10 to 1 and in washing and scouring we use 20 to 1."

We presented this inquirer's problem to a correspondent who furnished us with the following reply:

"It is evident from the lay-out furnished that the goods of your inquirer are not getting a sufficient boil for one thing, and we think that they are using too strong a bleach solution, and running same at too high a temperature to secure best results. We also prefer a weak solution of hydrochloric acid as a sour in place of sodium bisulphite, which is of course apt to leave an odor, such as they complain of.

"The amount of pine oil which they use is rather excessive, we think, and is undoubtedly caused by the fact that they are using caustic soda without soda-ash which would tend to leave harshness if it weren't for the penetrating oil.

"Another thing which is not given proper attention in most bleaches of this kind is the rinsing. No rinse should be less than 10 minutes, and in the cold water rinses particularly, provision should be made for a more thorough rinse than simply running in successive baths can give. We prefer a perforated type, installed on the back or curved top edge of the tub, with perforations pointing downward at an angle of about 30 degrees with the horizontal, so that the streams of water strike the goods as they come off of the reel. A second row of perforations at such an angle that they strike against the piled up fabric in the back of the machine is also desirable. This perforated pipe should be arranged to handle both hot and cold water, so that both warm and cold rinses can be given.

"In order to prevent the tub from filling up to too high a level during the use of the spray pipe, slots may be cut through the front or straight edge of the tub at a point above which the tub is never filled. In other words, at the maximum liquor level. These slots serve two purposes—they take away the over flow or additional water put on by the spray in back, and at the same time, also act in some measure as a skimmer drain and to skim off considerable dirty material from the top of the bath, which otherwise simply sinks down on top of the goods when the tub is drained.

"We then offer the following as a possible bleaching routine in the Rodney Hunt machine:

(1) Boil 1½ hours with 1 per cent caustic soda, 2 per cent soda ash, and 1 per cent pine oil.
(2) Rinse 10 minutes with water at 110 degrees F., using spray pipe if possible. Drain.
(3) Rinse again for 10 minutes with cold water, using spray pipe.
(4) Bleach as long as necessary to obtain proper white, which should not be over an hour, and at a temperature not to exceed 90 degrees, and preferably with a cool solution not over 70 degrees. Cut down gradually on strength of bleaching solution, a quart per hundred pounds at a time, until the lowest possible concentration is reached, at which it is possible to obtain the proper white.
(5) Rinse 10 minutes in cold water, using spray pipe.
(6) Sour about 10 minutes with hydrochloric acid, about 1 pint per 100 lbs.
(7) Wash 10 minutes with cold water, using spray pipe.
(8) Wash for 20 minutes with cold water, using spray pipe.

"The foregoing is about the procedure used by a number of well known manufacturers, using Rodney Hunt machines on the type goods mentioned by your inquirer. It is probable that slight changes will have to be made to suit local conditions, but the changes which we have indicated from their present routine, will, we believe, give them a much better bleach, with a fine feel and handle."

SPECIFICATIONS OF THE MODE

Standard-Coosa-Thatcher Durene—a mercerized yarn of inherent quality—meets them all—with a wide margin—

There's Workability—so essential in keeping down costs

There's Soft Lustre—so attractive, so full of eye-appeal

There's Wearability—so economical—so irresistible to your buyers

Plus Marketability—Standard-Coosa-Thatcher Durene's own birthright.

WRITE FOR LATEST COLOR CARD

STANDARD—COOSA—THATCHER COMPANY
CHATTANOOGA, TENN.
Executive and Sales Office: Lafayette Bldg., Philadelphia, Pa.

Durene
STANDARD COOSA THATCHER

Securing More Even Tension on Heel and Toe Yarn.

Says much better work has been the result since threading up the machine differently.

EDITOR COTTON:

I imagine most knitters have experienced trouble from time to time with heel and toe yarn slipping out of the tension device, causing waste on heels and toes, such as loops, cut-outs, etc. We had our share of trouble along this line as long as we were running our heel and toe yarn as shown by Fig. 1. This represents the old method of running the heel and toe yarn, and I am sure that there are still many experiencing trouble because they thread up their machines as shown by Fig. 1.

Fig 1. is a sketch of a yarn take up bracket showing just how the yarn has tension placed on it. It is

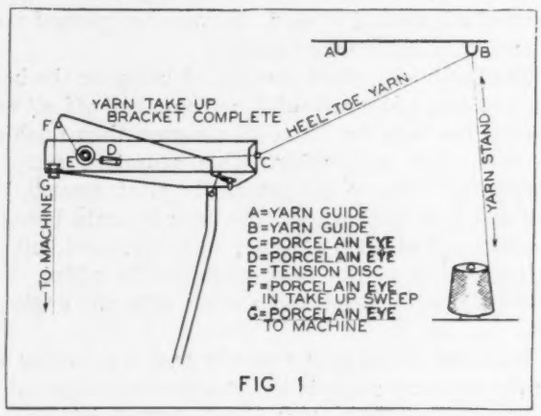


FIG 1

noted that the yarn passes from the cone to the guide *B* and from *B* to the porcelain eye *C*. From *C* the yarn passes in a plane almost parallel to the horizontal to the porcelain eye *D*, from which point it passes through the tension device *E*. Passing through the tension device in this manner, that is, in a horizontal plane, the yarn is not locked by the tension device and very frequently slips out. As long as we were threading our machines up in this manner we had quite a bit of trouble with the yarn jumping out of the tension device.

However, since adopting the method shown by Fig. 2 of threading up our machines we have had practically no trouble of this nature. It will be seen that the yarn passes from the cone through two yarn guides, *A* and *B*, and then passes on to a porcelain tube *D*. This tube is about one inch in length, with an outside diameter of ¼-inch and an inside diameter of ⅛-inch. This tube is tilted in such a way that the yarn passes to the tension device in a manner that will cause it to be locked by the tension device, thus preventing the possibility of its jumping out.

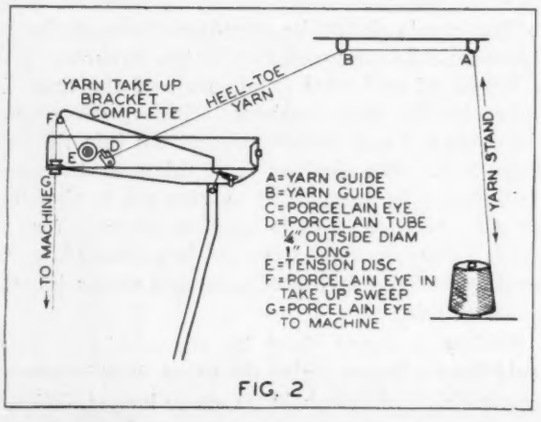


FIG. 2

I realize this is a very simple "kink", but since threading our machines up as shown by Fig. 2, rather than as shown by Fig. 1, we have surely obtained much better running work. We found that the use of a porcelain tube, shown by *D*, gives us much better results than merely having a porcelain eye at this point.

CONTRIBUTOR NO. 5050.

Trouble With Cut-Out Stitches.

A "kink" that will prove helpful to those who have had trouble with cut-out stitches.

EDITOR COTTON:

Sometime ago we were running a mercerized number on 300-needle, 70-gauge Model K machines, using 90s/2 in the boot and foot, 80s/2 in the welt, 70s/1 in the sole re-inforcement and 2 ends of 100s/2 in the heel and toe.

Our mill required us to knit this style as tightly as possible, using these yarns, in order to get as tight a foot and ankle as possible, which would make for a well appearing and more salable product for the mill. However, in adjusting our machines accordingly, we encountered a more or less common difficulty on this type of machine, which was cutting out on the yarn changes when going from ankle to heel, heel to foot and foot to toe.

This cutting of the stitches was due of course to the lapping of the yarns, and the necessity of keeping the cylinder lower in relation to the hooks of the needle at the feeding point. All other conditions on the machine which might be a contributing factor to this type of trouble were checked, but still the larger per cent of waste was due to these cut-outs. It was necessary for us to find a solution, for it never does us any good to tell our management that it can't be done.

As a means of solution to this problem, we made use of the take-up on the left side of the take-up bracket. It will be remembered that the take-up on the right makes the heel and toe. We were not inserting a mock seam in this hose, so the take-up for this seam was removed in order to make room for the other take-up on the left side of the bracket.

The idea was this: by using both take-ups for making the heel and toe, the leg and foot yarn (90s/2 mercerized) was threaded through the take-up on the left-hand side and into the same feeding finger as formerly used. This 90s/2 yarn would work the same as it formerly did when making the leg and foot, but the drum cams for this yarn are removed so it does not come out of action when changing into heel and toe. One of the two yarns are removed from the machine, which makes the heel and toe, so that only one yarn drops in when the change from ankle

to heel, off heel and on toe is made. The fact that the leg yarn, 90s/2 mercerized, does not come out of action when changing into heel or toe, and only one drops in when making these changes, enables both of these yarns to be working at the same time through the two take-ups.

The advantage of this change is that there are only three yarns on these yarn changes where formerly there were four. By removing one cone of heel and toe yarn, and utilizing the leg yarn instead, the load on the needles during these changes is reduced to such an extent that cut-outs do not occur.

By this change, when transferring into heel, one end of heel and toe yarn drops into action, and only the sole re-inforcing yarn comes out to shear off. The leg yarn, of course, stays in action, working through the take-up for making the heel. Transferring off the heel, the one end of heel yarn comes out, shears off and the sole re-inforcing yarn drops in. Transferring into toe, the sole re-inforcing yarn cuts off and one end of the toe yarn drops in, the leg yarn remaining in action until the completion of the hose when it shears off.

Another advantage of this change is it will prevent missed yarn changes due to the fact that the leg yarn is always in action, regardless of whether the heel and toe yarn miss the hooks of the needles.

CONTRIBUTOR NO. 4993.

Dyeing Full-Fashioned Hosiery.

This contributor favors the one-bath method. Further discussion of the subject from readers is invited.

EDITOR COTTON:

There are three methods used in the dyeing of full-fashioned hosiery: first, dyeing in a neutral bath after the goods are boiled off; second, that of dyeing and boiling-off in one bath; and third, dyeing in an acid bath after the goods have been previously degummed.

A few years back the first method was in use in nine out of ten mills. And at that time it was the surest and safest method. Dyers were as a rule skeptical about using the one-bath method. The general belief was that shades could not be controlled and that the goods were impaired. Shades dyed in this method were not considered fast, and the goods seemed to have a harsh finish. Most of the complaints were justified.

However, today the one-bath method has taken on a new aspect. Better boil-off materials are to be had, among these being boil-off oils with a low pH that do not leave the goods too harsh, but serve to impart a splendid finish to the hosiery. Faster and more level working colors are available—colors that will exhaust clearly and are fast when used with an alkaline bath.

Dyes are fed into machines with more safety. Due to the presence of boil-off oil and the dissolving sericin, the assimilation of the dyestuffs is retarded. Level dyeings are sure to result when usual care is exercised in dyeing a lot. If lots are handled properly, one solid shade should be obtained throughout the entire lot unless the lot contains several different silks. Most dyers claim that when several different shades are obtained, it is due to the condition of the silk, In a few instances they are right. In the majority of cases, though, it is caused by the method of dyeing. If the two-bath method has been used, when several shades are obtained this condition can be traced to the goods not being properly boiled-off or faulty application of dyestuff or selecting colors not suitable for the class of work.

Where the one-bath method is used, different depths of shade are not liable to appear if sufficient boil-off material is used, and the usual care has been exercised in selection of the dyestuffs. A great many mills are not very particular about the type of oils used in the knitting room. The cheaper grade of oils cause the dyer no end of trouble. In some cases it is impossible to emulsify these oils in the boil-off and dye bath. The result is there is a separation of the residue of these oils and the dyer has a spotted lot on his hands. If this condition exists in a mill where the one-bath method is used, the two-step method may be used with satisfactory results.

The two-step method consists of bringing the bath to a boil and adding about 5 per cent boil-off oil and running the bath for 15 or 20 minutes, then flushing the bath over thoroughly. This operation removes the residue that would ordinarily float around the bath and spot the hosiery. The bath is again brought to a boil and about 8 per cent or 10 per cent boil-off oil (according to the type of goods) is added. The dyestuff is next added, and a clean lot is the usual result.

However, if the proper care is used in selecting oils for the knitting room it is not necessary to resort to the two-bath method. The dyer should always be consulted when oils are selected for use in the knitting room. When samples of oil are submitted, the dyer should be able to determine from tests which is proper to use. One of the most widely used tests for determining the amount of carbon, etc., in an oil is the acid test. This is done by taking eight parts of mineral oil and adding four parts of sulphuric acid to a test tube. The liquid in the tube should remain colorless.

The third method is that of starting the degummed hosiery in a neutral bath and slightly acidulating the bath with acetic acid. A very good exhaust is obtained and a very good finish is imparted to the hosiery. This method, while satisfactory, is not widely used.

The one-bath method is becoming more popular each day. Business conditions today make it imperitive that goods should be expedited through the mill as economically as possible. In the dyehouse goods are boiled-off and dyed in almost half the time that it takes for the other methods. Hosiery doesn't have to be extracted and shaken out and put into the regular dye nets. The elimination of this operation is not only a saving in time, but it enables one to also eliminate an operation that is another source for pull threads. Slightly more dyestuff is consumed by this operation but the saving of time and excess handling overcomes this.

Hosiery properly dyed by the one-bath method should have a better finish than that dyed by the other methods. It should hold its shape longer. With the

DIXIE *Durene* In Underwear for Men

DIXIE durene is proving profitable for knitters of men's underwear. Its dull sheen, pliability and evenness pave the way for new styles. Its absorbency and softness make a fabric that is comfortable for the wearer. Its strength and freedom from knots give wearing quality that brings buyers back for more.

Let a Dixie representative give you samples, put up especially for underwear knitters, for a trial run in your mill. You will find, as others have, that Dixie durene "makes good" knit into underwear for men.

DIXIE DURENE . . . A Product of Controlled Manufacture . .

Dixie Mercerizing Company

CHATTANOOGA, TENNESSEE

elimination of excess handling, and cutting the boiling time almost in half, the hosiery should reach the consumer in better shape and should wear longer than hosiery dyed by other methods. When this method is handled efficiently, more satisfied customers and more sales are the result.

WILLIAM H. LORIMER.

Seamer Production on Chiffon Hosiery.

EDITOR COTTON:

The questions asked by "CONTRIBUTOR NO. 5023" are ones that can only be answered in a relative way, as they do not hinge around any definite standards. He asked, "What production should a seamer with one year's experience turn out per day on a four-thread chiffon full-fashioned stocking? Also, what should be the average number of stockings that a seamer should get back to be re-seamed out of a daily production?"

Certainly a seamer with one year's experience should have reached such proficiency that her own work could be set up either as a satisfactory or unsatisfactory standard for the type of work being done. However, this would depend to a great extent on the type of machine being used, type of sewing thread being used, the type of stocking being seamed, the type of machine fixer on the job, and most important of all, the type of foreman in charge of the girl in the entire process. It stands to reason that first of all a back seaming machine best suited for the purpose should be employed. Then the machine should be equipped with proper seaming thread and kept in first-class repair, and on top of all must be an operator who has been carefully instructed and who will show an interest in this particular type of work.

Analyzing the questions to a little greater depth than they indicate, we will say first that the production from a back seamer depends a great deal on the type of stockings she has to back seam. So, to get a good production on a back seamer, it is necessary to start back on the full-fashioned legger and to see that the patterns of the stocking are uniformly knit, that is, that it is not knit long-sided on account of adjustment of machines producing the fabric or pattern loose on one side and tight on the other. I might say right at this point that it seems to be the attitude of a lot of full-fashioned knitters—and by knitters I mean foremen in charge of the machines—that it is an easy matter for a back seamer to correct this careless workmanship. This, however, is not the case, and it stands to reason that if a sewing machine operator is put under the strain of trying to retard one edge of a stocking and advance the other by putting unequal pull on the two edges of the stocking being seamed that it will be a very difficult matter for her to make such points as stripe at the welt, narrowing marks and high-spliced heel register uniformly—and at the same time her production will be appreciably retarded.

So, to make satisfactory questions out of the inquiry, and to give satisfactory answers to them, it will be necessary first for me to assume that the goods have first been properly knit. Second, that the back seamer operator has been properly instructed and has the supervision of a foreman who knows how to get results. Third, that the proper type of machine is employed for the operation and that it is kept in satisfactory repair. Working under such conditions we would say that the average daily ten-hour production on four-thread chiffon stockings should be around 30 dozen per day, and the goods returned to be re-seamed should be absolutely negligible and based entirely on broken or dropped stitches found by the inspector. Other bad seaming such as mis-matching of points supposed to agree, and too heavy seams, should be caught by the operator before the stocking is ever taken out of the cup wheels or feed cups of the back seaming machine, and the seam unraveled in its entirety and correctly seamed before being released. The fact that an operator has had a year's experience does not mean that she was either a proper selection of girl when placed on the machine or that she has been properly instructed after being placed on the machine or that she is working under the best conditions for maximum satisfactory production.

But, assuming that all of these conditions are satisfactory, then a girl of normal average ability ought to reach a satisfactory production in every respect in sixty days' time, and she ought to produce anywhere from three to five dozen per hour, depending on the weight and gauge of the fabric, and there ought not to be enough of re-seams to cause any worry whatever.

CONTRIBUTOR NO. 5032.

Among the Knitting Mills

DIXIE KNITTING MILLS, Newport, Tenn., recently reported that they had installed new machinery in their plant.

Baker-Boise Hosiery Mills, Dallas, Texas, report that they have ordered 12 new full-fashioned knitting machines, two being installed each month.

Camella Lowry, secretary of the Industrial Engineering Co., Lexington, Ky., state that they have been making an industrial survey at Corbin, Ky., with the idea of locating several new industries, including a knitting mill.

Work is nearly completed on the initial two-story unit for the Huntley, White and Jackson Co., High Point, N. C., and they expect to begin production of men's hosiery immediately.

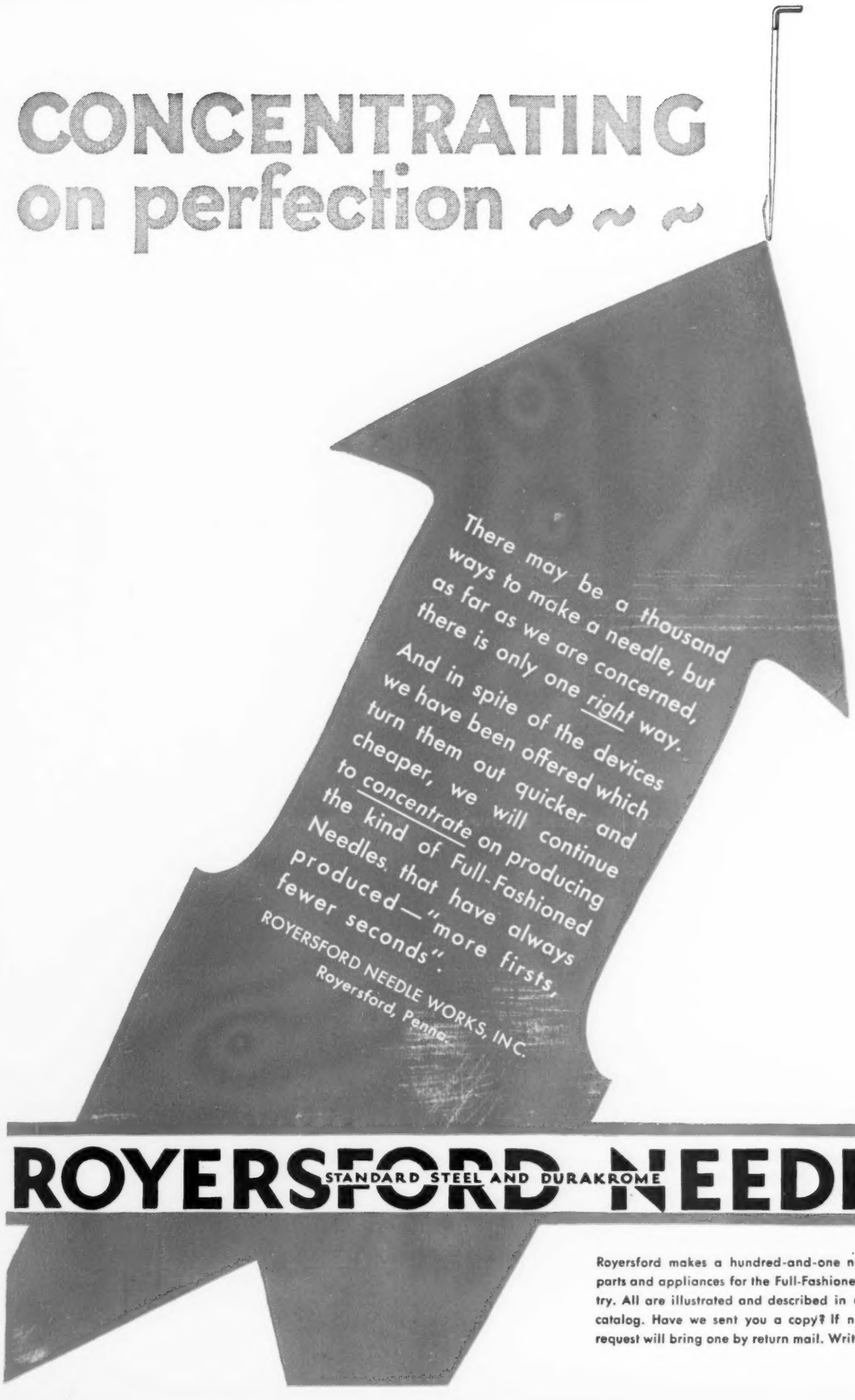
Plans for the expansion of the full-fashioned hosiery department of Adams-Millis Corp., High Point, N. C., by the immediate erection of a five-story finishing plant and the addition of one story to their present plant were recently announced by officials of the company.

New machinery for the Dovedown Hosiery Mills, Griffin, Ga., recently arrived at the plant and will be installed immediately. This mill was the first full-fashioned mill built in Georgia.

The Asheville Hosiery Co., West Asheville, N. C., recently purchased new equipment from proctor and Schwartz, Inc., Philadelphia. The equipment included a Proctor 30-board automatic boarding, drying and stripping machine for ladies hosiery. It is a two operator high speed type, capable of 32 dozen pair of hosiery an hour.

Walter Fred Hosiery Mills, Inc., Nashville, Tenn., recently increased its capital stock by selling $500,000 of preferred stock. This move was promoted by the desire on the part of the company to double their present equipment. Several 48-gauge machines and 20 new 45-gauge machines have been bought, some of which have been installed. Attachments have been bought for all of their machines for making nets lace clocks, and fancy tops.

CONCENTRATING on perfection ~ ~ ~

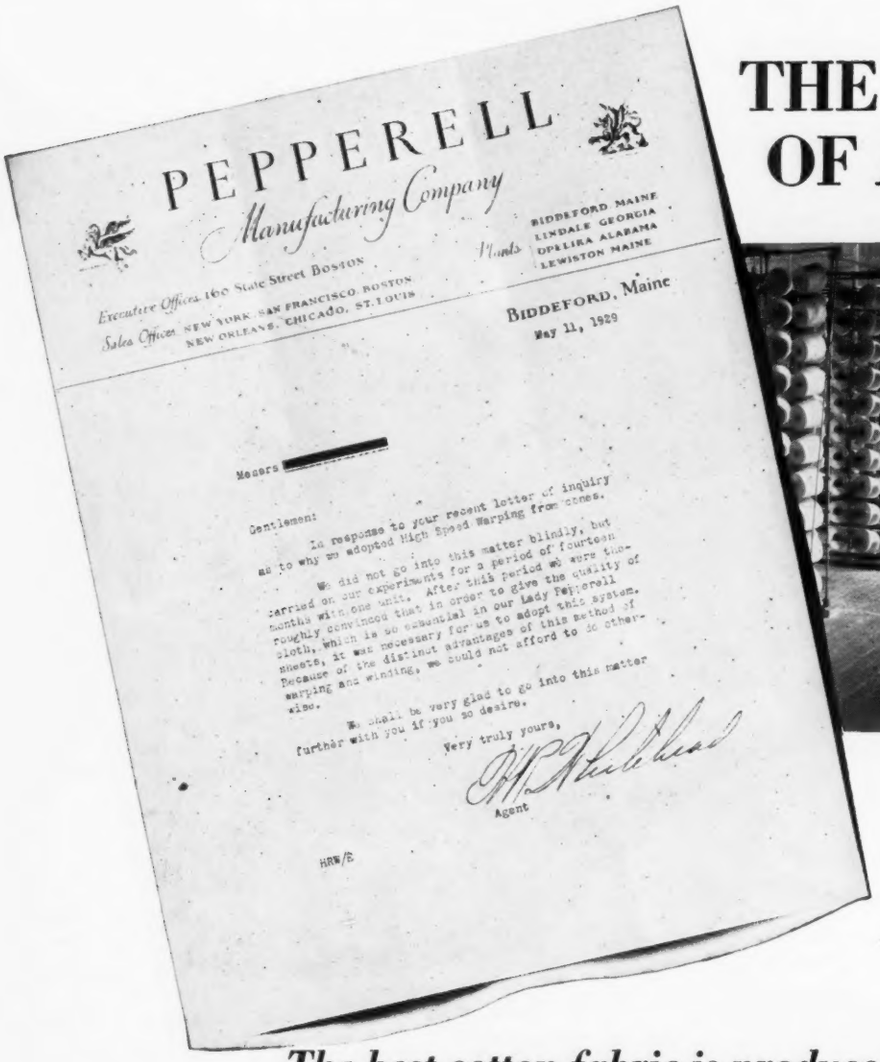

There may be a thousand ways to make a needle, but as far as we are concerned, there is only one right way.
And in spite of the devices we have been offered which turn them out quicker and cheaper, we will continue to concentrate on producing the kind of Full-Fashioned Needles that have always produced—"more firsts, fewer seconds".
ROYERSFORD NEEDLE WORKS, INC.
Royersford, Penna.

ROYERSFORD NEEDLES

STANDARD STEEL AND DURAKROME

Royersford makes a hundred-and-one necessary parts and appliances for the Full-Fashioned Industry. All are illustrated and described in our new catalog. Have we sent you a copy? If not, your request will bring one by return mail. Write today.

THE VERDICT OF A LEADER



PEPPERELL
Manufacturing Company

Executive Offices 160 State Street BOSTON
Sales Offices NEW YORK SAN FRANCISCO BOSTON
NEW ORLEANS CHICAGO ST. LOUIS

Mills BIDDEFORD MAINE
LINDALE GEORGIA
OPELIKA ALABAMA
LEWISTON MAINE

BIDDEFORD, Maine
May 11, 1929

Messrs [redacted]

Gentlemen:

In response to your recent letter of inquiry as to why we adopted High Speed Warping from cones.

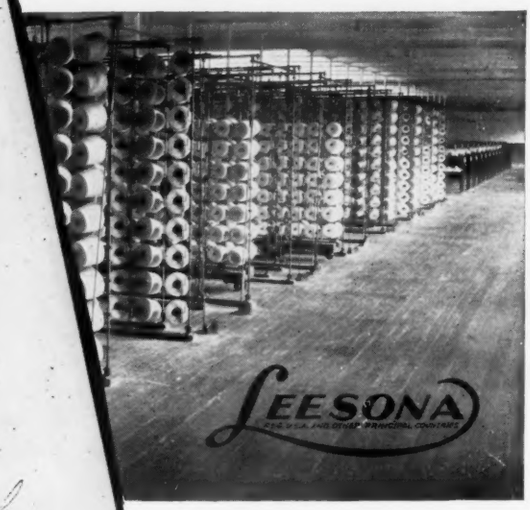
We did not go into this matter blindly, but carried on our experiments for a period of fourteen months with one unit. After this period we were thoroughly convinced that in order to give the quality of cloth, which is so essential in our Lady Pepperell sheets, it was necessary for us to adopt this system. Because of the distinct advantages of this method of warping and winding, we could not afford to do otherwise.

We shall be very glad to go into this matter further with you if you so desire.

Very truly yours,

H. P. Hinchcliffe
Agent

HPH/E



The best cotton fabric is produced by

1. **Removal of imperfections by the use of adjustable slubcatchers.**
2. **Winding cones for overend delivery at high yarn speed.**
3. **Continuous supply of yarn from Magazine Creel.**
4. **Every yarn drawn through tension plates with uniform pressure.**
5. **Result — better section beams — better loom beams — best cloth.**

The above results are obtained by the Universal method of handling warp yarns

UNIVERSAL WINDING COMPANY

BOSTON

323

UNIVERSAL WINDERS

The KNIT GOODS MARKETS

BY THE END of August the full-fashioned hosiery markets will have passed, probably the crucial period in the depression following the slump laid to excess production and accumulations of stocks, the weight of which it seems did not come to be fully realized until after the stock market crash, forerunner of a disturbance in commodities markets generally.

The summer of 1931 was approached by large hosiery interests as the most trying period with which manufacturers had yet to contend. It was not surprising, therefore, that many of the plants less favorably situated as to economic operating cost were closed down definitely. But there was no evidence, up to the present month, that sharp curtailment had materially improved conditions as affected by distress stocks of hosiery.

As summer advanced on a buyers' market, buyers became more determined in their hammering of mill prices. They were suffering from competition among themselves. Unit profits continued to shrink as prices declined under their attacks on values as a means for pulling themselves out of the hole which, unconsciously, they had dug for themselves. With distress stocks and manufacturers in straits for orders, price hammering by dealers served to keep wholesale prices slipping until manufacturers had to curtail output to near a shortage or produce only against orders.

With numbers of mills in the southern area and a fair proportion scattered over the northern field fairly well occupied, application of any remedy for the bad situation growing worse was not so easy a matter as some may have supposed it might be. Announcements making their appearance around and following the middle of July were regarded as a sign that some among the mill heads were prepared for a trial of heroic measures for steadying the market.

While it was the understanding in the trade that such mills as the Berkshire, selling in lots of not less than five dozen pairs of a color; the Apex, distributing through jobbers exclusively, and the Golden Belt Manufacturing Co., probably would lead in the upward price movement, and although some few mild revisions have become effective, it is too soon to approximate results. But that a turn for the better has been made, soon came to be the general impression, and it was agreed in the trade that it was up to the manufacturers themselves to hold whatever ground has been or is to be gained by drastic measures—first, sharp curtailment, and afterward, an advance in prices to a level where today may be expected to take care of tomorrow.

In another few weeks there should be—and normally would be—advanced preparation for the fall and early winter trade. Some leading factors seem to doubt that much progress will be made with such preliminaries, pointing to style uncertainty especially having a greater than usual bearing on the attitude of buyers toward goods for future needs. In any event, it is argued, if price improvement can be achieved, there will be no need to worry about fall distribution. It is believed standard goods can be sold profitably even while producers of full-fashioned silk stockings for the minimum priec brackets persist in attempting the impossible until removed in the weeding out process, deserted by one-time friends, the eternal price hammering element.

A Flurry in an Old-Time Staple.

After a southern mill line of misses' combed and carded ribbed stockings had been offered for a day or two by a New York mill agent at reductions which were said to bring the price to less than cost of production, the line was withdrawn. This may be said to have been the only somewhat sensational happening in the New York hosiery primary markets in July.

The trade rates misses' 300-needle goods as representing the market when priced around $1.15 a dozen on size 7 for combed, and $1.05 for carded. quotations on misses' ribs in the limelight for a few days served to recall the not so many years ago when 300-needle combed and were priced on size 7 for a rise and fall, and carded ribs on 28 ounces per dozen.

No buyers were heard to express disappointment over failure of mills to come on the market with infants' socks for the next season. An opening in August or even later, it was said by some, would be sufficiently early, with neither the rayon nor mercerized cotton yarn markets credited with stability.

While conditions in the markets for men's and boys' golf and sport hosiery are the subject of little complaint, and most lines of popular price hosiery are going into distribution at a stage indicating a nearer balance of production with current demand, it appears that hardly any class is free from the effects of the situation in the full-fashioned group.

Advances in Hosiery Prices for Fall Foreseen as Mills' Margin Narrowed

ADVANCE INFORMATION from a source that ordinarily commands rather general respect in the distribution branch of the hosiery trades was to the effect early in July that the "next formal announcement of prices by any widely recognized factor in policy would herald an advance." It seemed when the prediction was made that by the time the August issue of COTTON reached its readers the upward revision would be recorded. In fact, it was expected an advance would be in effect by the end of July, much depending at that time upon developments in the markets for raw materials and the status of the hosiery primary markets.

It has been the determination of a group of man-

Not so much of this nowadays

"DARN!" says the modern woman; but she doesn't. Why bother with mending holes or runners when a new pair costs so little?

Good stockings are cheap, and the ladies are taking advantage of it—buying more, mending less, and accounting for a demand which the industry can bank on year after year.

To produce the millions of dozens they will buy this year and the added millions next year, it takes the output of more than 300 full-fashioned hosiery mills, each finding an outlet for the *class* of merchandise it is equipped to make. Some will be content to compete in the low-end market at sacrifice prices, others will find their operating costs impossibly high with the present margin of profit. Still others, with up-to-date machines and equipment, will continue to supply *preferred* merchandise to a large and stable market, at prices which "show up" the inefficiencies of obsolete machines.

If you are planning on the future, let us show you the returns in dollars and cents from an investment in modern equipment.

TEXTILE MACHINE WORKS
READING, PENNA.

ufacturers to put a stop to the manufacture of full-fashioned hosiery that cannot be passed into distribution except at a loss to mills. Retailers, it was pointed out by various observers, are as a rule able to sell on around the former arbitrary mark-up, and it has been held that, no matter how low the price in retail store, it shows a substantial margin of profit for the stores. This, it is maintained, is made possible by mills accepting almost any price that will move a hang-over lot of stockings.

The Archer Hosiery Mills, Columbus, Ga., in a letter to its representatives several weeks ago, ventured the suggestion that "some men and some firms [referring to hosiery interests only] will not survive the last few years."

Manufacturers discussing the indicated certainty of upward price changes have recognized for some time that the period of survival for numbers will be measured by the extent of their ability to resist the wiles of buyers whose salaries depend upon how much of a profit they can show for their departments on goods that yielded no profit to mills.

Buyers have, in instances, the support of their superiors, who get back of propaganda for making it appear there is pressure from the buying public for low prices, and that they cannot pay what they admit manufacturers ought to receive for goods. Thus the manufacturer who may be contemplating a profitable price for his goods, is met by dealers with a virtual mandate that he reduce them "in response to pressure from the consuming public."

Unless manufacturers can halt the tendency to lower values which are not a reflex of lower original cost, said a well known mill executive commenting on reported intended advances, the Archer Hosiery Mills prediction will be visualized sooner than some interests might contemplate.

A favorite number for attempted price undermining by buyers who are not content unless they can get under the lowest figure at which goods are known to have previously changed hands, is four-thread silk 45-gauge stockings. They tell of sales at $6 a dozen and proceed to negotiate for sizable lots at a dime a dozen less, working one mill against another in the hope of eventually getting acceptance of an offer of $5.75. It was a well known buyer's boast when his department was selling lace top hosiery for a dollar a pair that he soon would have a number to retail for 85 cents—and he did.

One Silk Line Escapes Price Lowering.

There is one mill line of silk hose fetching the identical price of fifteen months ago. It is the "70-4-70" crepe brand of the Harron Hosiery Co., Philadelphia. The retail price is $1.95 a pair, the same as when the stocking went on sale in May, 1930. Neither the mill nor the store has made a reduction, it is stated by the mill management, and it is declared no other branded stocking has a record for sustained value during the past year. Besides, it is stated, sales have steadily increased, the mill for some time being operated to capacity and shipping out the entire production.

The producer of this line cites his experience with it as proof of the possibility of price maintenance, admitting however, that, in his case, competition did not figure, since the construction of the stocking is patented and his mill is the only one making it, none being granted permission to produce it on a royalty basis.

As sales of this stocking absorb the entire output of the Harron mill, and, an executive states, are increasing, he was asked whether in the event of his plant proving inadequate, he would enlarge it. "I would not," he replied. "We are even now negotiating with a mill to make the stocking to our specifications, under our general supervision, for taking care of demand over and above the capacity of our mill, and so long as we hear the familiar complaint that the full-fashioned industry is over-machined, we would not add another machine, preferring to hand some business to a mill that might need more orders."

Production at Low Stage.

Buyers of hosiery that is not in controlled production are pressing the price issue to the point where, manufacturers say, they either must assert themselves or operate plants only against orders, whether they want to or not. This sentiment is heard often in a market that, so far as volume of distribution is concerned, is as active as under normal conditions at this season. The remedy for price instability and absence of adequate profits is in the hands of the manufacturers themselves, said E. A. Bleckwell, underwear and hosiery buyer for the Snellenburg department store in Philadelphia during a discussion of the threatened price rise effective around the beginning of August. Asked to indicate the remedy, he expressed it in fourteen words—"Run no mill longer than eight hours a day and five days a week."

It seems doubtful if the production of full-fashioned hosiery in Philadelphia this year represents more than a five-day week and eight-hour day output, considering the number of plants that are idle and the length of time they have been shut down, to say nothing of part-time operation of many others. It is the understanding locally that several which have been out of production as a summer time contribution to the curtailment program never will resume operating. Two or three of the better known mills closed in June for indefinite periods. They had been short of orders for some time before closing, and in one instance an executive said he had proved to his satisfaction he could not run the plant, a modern one, except at a loss.

Demand for Mesh Hosiery Feeds Hope of Making "Nets" a Holiday Special

EXTREMES in sentiment in relation to women's mesh stockings were presented quite recently by several manufacturers discussing them seriously for the winter holiday shopping, and Woolworth stores displaying them for 20 cents a pair.

Meshes have had a longer run this year than ordinarily, which has encouraged a few mill men to feel they might be made popular as a Christmas item.

NEW OVEREDGING MACHINES

Union Special

Class 39100

With a recommended operating speed of 4750 R. P. M., the new Union Special Class 39100 machines present an almost unbelievable performance for all kinds of overedging work. For the first time the main shaft is located, not in the lower part of the bed but directly over the main operating elements. This permits an unusually efficient direct drive and reduces vibration to the absolute minimum.

Because of the design, the machine takes up only 6" of table space. All moving parts are enclosed yet readily accessible. The oiling system and bearings are highly perfected to give attentionless service.

Already tested in exhaustive field trials, Class 39100 machines have proven their ability to effect high production increases with unsurpassed quality of work produced.

Write for samples and complete information

UNION SPECIAL MACHINE CO.

400 N. Franklin Street

Chicago, Ill.

C 8-Gray

As a matter of fact, a few have been sold in recent years during the time that the holiday spirit may be counted upon as a sales promoter, but they never received any more attention than down-to-the-minute staples.

It is said this is the first time meshes were ever sold for as little as 20 cents a pair. Whether this really is the case matters little in connection with contemplation of putting them in Christmas packing, say the few persons with whom the holiday mesh proposal was discussed. It had not been seriously considered among buyers, according to some of those rated among the foremost in forecasting style, but is something that will bear watching.

Demand for mesh hosiery proved a boon to numbers of the seamless mills which turned off the properly made and finished, to be sold profitably at a price inside of a dollar a pair. The knitted seamless has been too strong a number for leaving much room for the cut and sewn. One of the better lines of this variety was exploited as an all-silk tailored stocking, with the French heel and cradle shape toe, and full-fashioned top with picot. It was of the large mesh—extreme in this respect—considered the more popular at the time the line was first offered, priced $10.50 a dozen at a Pennsylvania mill, precise location not disclosed. What success followed its presentation has not been revealed. Between the Jacquard and the knitted full-fashioned and seamless, it would appear that considerable sales promotion would be needed for putting over even so good a cut and sewn stocking as the number referred to.

In the limited discussion of proposed holiday specials, it was found that mesh hosiery bore a slight relation to the lace top, which, until last month at any rate, was still in the ascendancy, and an indicated very promising novelty for almost any occasion within the period for which buying now may be considered. Original creations of lace hems were in favor, and in some stores had a big sale, until the adjustables made their appearance. They were the most distinctive stocking item in the hosiery department for stores whose customers are accustomed to paying prices in the higher brackets. And it was stated in some of these retail establishments that all other forms of lace tops were yielding to adjustable. But there appeared on the market stockings of three lengths in one, which were brought out for a low price and not constituting an infringement on the Gotham patented adjustable, which at the time was receiving the benefit of much publicity of allegations and counter-claims in a flood of litigation growing out of adaptation of some inventor's ideas assumed to be protected by patent.

What to some hosiery department managers seems a really national plan for adjusting stocking length to the height desired by woman, short legged or with an excess of length, or suited to whatever length of skirt she may elect, is the packing of three lengths of a color and size in a carton. This might not be encouraged by dealers, as the scheme necessitates a somewhat larger stock. But, it is pointed out, if retailers were to keep a record of sales of each length in the several sizes it would not be long be-

THE quickest and most economical way to get into production on new merchandise, is to send for the Brinton representative. Brinton makes circular Knitting machines of all kinds, for every purpose. Brinton engineers will help you select the precise Knitting machine you need — or will make it for you if necessary.

If one of the many types of Brinton Rib Knitting Machines or Open-top Jersey Knitting Machines, in all diameters, doesn't exactly suit your purpose — turn the Brinton staff of engineers, and the Brinton experimental department loose on your problem.

You'll get action — results — the machine you want.

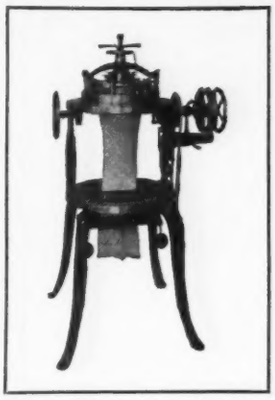
Ribbers — of every type.

Jersey Machines — Plain and Fancy stitches.

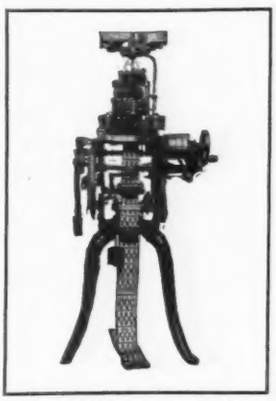
Rib body machines for underwear and bathing suits.

Sweater machines — Rib and Jersey Types.

Special Knitting Machines from ¼" to 36".



Plain Rib Body Machine



Trick Wheel Ribber

H. BRINTON COMPANY

3700 Kensington Avenue
Philadelphia

New York Office: 366 Broadway

BRINTON (CIRCULAR KNITTING MACHINES)

of EVERY Kind for EVERY Purpose

Durene

REG. U.S. PAT. OFF.

NATURAL BLEACHED

AND COLORED

YARNS

Main Office

123 South Broad Street

PHILADELPHIA

Manning St.
HIGH POINT, N. C.

261 Fifth Ave.,
NEW YORK

418 Franklin St.
READING, PA.

222 North Bank Drive
CHICAGO, ILL

James Building
CHATTANOOGA, TENN.

52 Chauncy St.
BOSTON, MASS.

HAMILTON, CANADA

LOS ANGELES

Mills

CHESTER, PA. **BELMONT, N. C.**

ABERFOYLE MANUFACTURING

COMPANY

REPRESENTATIVES IN ALL THE PRINCIPAL COUNTRIES OF THE WORLD

fore the dealers would be able to strike an average as a guide for better specifying assortments when placing rush orders.

What the better stores and the producers of the better hosiery are aiming at is an airtight method for affording a fair measure of protection against offerings of near-staples at prices that are keeping both elements busy nights striving to keep themselves in their respective jobs.

Hosiery Irregulars Present a Serious Problem.

Irregulars, seconds and thirds of women's silk full-fashioned hosiery continue to be offered in volume sufficient to plague manufacturers trying to maintain adequate prices for first grade, and annoy the element among large retailers that insists upon distinctive marking of all classes of sub-standards for the protection of themselves and the consuming trade. It appears that instead of arousing an effective interest in the matter of protection, the announcement of the Berkshire Knitting Mills around two months ago that it would stamp all of its substandards, was the signal for broader and more systematic trading in irregulars by a few small concerns which had sprung up within the last few months.

A dealer in irregulars in Philadelphia who specializes in buying for price, is credited in the trade with assorting his purchases so carefully that he is able to get a small per cent of what he sells for first grade, out of almost every lot. These are suspected of representing the "first quality" stockings displayed at prices from 59 cents down. Each lot yields him a fair proportion of "irregulars" and what remain go into bins stenciled "seconds" and "thirds", the latter representing but a small part of his purchases. This dealer operates in an omnibus building on Market street near 10th and, according to persons with whom he is in competition, drives an apparently profitable one-man business, and is able to boast of "service" for his customers.

Mills distinguishing their irregulars and lower, claim they cannot obtain as favorable prices as before they began applying the tell-tale stamping, but intend to keep on trying, for a time, to justify their policy. They are receiving encouragement from a few buyers for large stores. Wanamaker's, for example, says, "do not turn back. If the seconds we buy for our downstairs store are not so marked, we will mark them ourselves." Another establishment says that if they buy unstamped seconds they will expect an allowance for the cost of doing the job.

A manufacturer of a branded line of silk stockings selling for $1.95 a pair states that at one time he was getting 35 per cent seconds. He now is paying the very top price for the silk he uses and has materially reduced the per cent of anything not measuring up to first grade by severe test. As to remedying the irregulars "evil" through getting rid of an element among hosiery bootleggers, it appears that will be up to the manufacturers themselves, no less than establishing and maintaining prices at levels where a manufacturer can at least feel that his plant is affording him a job.

Hosiery Stocks in Manufacturers' Hands Shown by Mill Reports to be Diminishing

A GLANCE at the Department of Commerce tabulation of production reports of 299 hosiery manufacturers shows some interesting declines and gains in the use of rayon for hosiery since May, 1930. The more spectacular change of any description, however, was a decline in production of infants' silk socks to 5,969 dozens from 20,123 dozens.

All-rayon production increased 42 per cent in women's seamless and almost 50 per cent in boys', misses', and children's hose. Production of rayon in combination with silk dropped by 58 per cent from May a year ago, in women's seamless, and 74 per cent in boys', misses' and children's.

Notwithstanding low prices for women's silk full-fashioned, there was reported a substantial increase of rayon full-fashioned, but a drop of 68 per cent in output of full-fashioned of silk in combination with rayon. The indicated increase in rayon full-fashioned is probably accounted for in the broader use of Bemberg which, in the Commerce reports, is classed with rayon. Cotton-rayon combination increased sharply in men's half-hose, women's full-fashioned, and boys', misses' and children's, while gaining around 50 per cent in women's seamless.

The reports from the 299 identical establishments representing 350 mills, show, for all classes, increases in production, new orders and net shipments, but a considerable falling off in unfilled orders and of stocks in hand at the end of this year's month. A large part of the falling off in unfilled orders was in men's seamless half-hose, the production of which increased to 284,365 dozens from 189,085. Women's full-fashioned gained slightly in net shipments but lost heavily in unfilled orders, the decline from May last year amounting to about 40 per cent. Stocks at the end of May were 17 per cent less than a year ago. Stocks of women's seamless decreased by around 27 per cent.

Underwear Jobbers Making Up Orders for Men's Heavies—"Shorts" for a Dime a Pair

UNDERWEAR JOBBERS are slowly screwing their buying courage to a point where they are writing small orders for men's heavy-weight cottons. Until July the majority of buyers for wholesale distribution were said by mill representatives to be giving heavies little attention. Some who have been well outside the market walls have broken through, others will be doing some business with mills through August. They were at work on their orders quite generally last month, when, necessarily, there was a disposition to again defer, in view of Germany's credit situation. Now, it seems the consensus of leading wholesalers, initial orders have got to be handed to manufacturers, "whether we do or do not like world conditions and prices in the domestic markets."

There is no longer any great fear of prices going lower. On some men's heavy-weight items they are around ten per cent below the opening; all items

QUITEX
SPUN RAYON

Yarn is one of the life bloods of the textile industry — but sales must be stimulated with the unusual—new yarns must be introduced. The unusual appearance of Quitex Spun Rayon, as well as its practicability, have caused it to be extensively used in those mills manufacturing smart textiles for the modern-minded trade.

Quissett Mill
New Bedford, Mass.

Wm. M. Butler, Pres.
Edward H. Cook, Treas.
Thomas F. Glennon, Agent.

You will like the dull lustre and the unusual strength of Quitex. Send for samples.

QUISSETT MEANS QUALITY

SILK HOSIERY FINISHES
BROSCO DULL FINISH-FINISHING COMPOUND S. P.
BROSCO SCROOP OIL

Can be used alone or in conjunction with one another to produce any desired feel and finish.
Does not shrink or tighten up the fabrics.

SCHOLLER BROTHERS, INC.
Amber & Westmoreland Streets
Philadelphia, Penna. Since 1907

SCHOLLER BROTHERS, LTD.
St. Catharines, Ontario
In Canada Since 1927

CROWN
BRAND RAYON YARN

The Crown is your buying-guide to good rayon.

More than 30 different varieties to help you with all-rayon or rayon-cotton innovations.

THE VISCOSE COMPANY
200 Madison Avenue New York City

Simplicity and Accuracy in Loper Textile Cost Method

In systems we install, the final results are so presented that the treasurer can quote prices on any of his regular products in any market without delay, and the facts are so condensed that all the necessary figures can be carried conveniently in the vest pocket. Cost of new constructions can be figured within a very few minutes.

Only a part of the time of one clerk is necessary to maintain the system.

Fully 25% of All Cotton Textile Spindles in U. S. are operated by clients using Our Cost Methods.

RALPH E. LOPER CO.
INDUSTRIAL ENGINEERS
Specialists in Textile Cost Methods Over 18 Years
FALL RIVER, MASS. GREENVILLE, S. C.

have declined, but the drop is rather insignificant to some. But, say buyers, their 1931 orders will be for considerably less underwear than was called for in the 1930 initial orders. Men's cotton heavies, it was thought by a leading operator in the primary markets, are, in a sense, in the same category with women's cotton underwear, in that both are fast declining in consumption.

The markets for medium and light weight underwear, fairly active as to cottons and rayons, appear satisfactory to distributors generally, as to volume of business and prices on a reasonably settled basis, but mill prices continue too near bottom cost for manufacturer comfort. Woven cotton shorts were further popularized during July by prices that almost put the echo of one-time drawers in a strictly gift class. Woven cotton shorts, white with broad stripes of gaudy color, are on sale regularly as a 25 cent item, and shorts for boys are selling for 10 cents a pair as one of the more active items in Woolworth stores.

Production Season for Sweaters Starts Late As Mills Come through Bathing Suit Rush

FOLLOWING a strong finish for the season for bathing suits, manufacturers are at last booking an encouraging volume of business in men's and women's sweaters. Most of the orders, say mill heads, indicate that buyers are operating ultra-cautiously, and confining their commitments chiefly to deliveries for early fall. So, while manufacturers may not have any great amount of business in hand, for assuring steady plant operation beyond a month or two, they are, in instances, under pressure for completion of orders for shipment as per details.

Manufacturers regard women's light-weight worsteds as among the present more active items, although receiving some little business in men's heavy coats. Because worsted yarn prices are at the lowest level in a long time, mills are using less cotton in mixture for the low price heavies and, it is stated, reducing the weight of most numbers in men's heavies lines.

Sweaters having had a late start for fall and winter, it is regarded likely the tail end of the production season will be a repetition of that for bathing suits. Many of the mills were rushed with repeat orders for most of July after it was thought the last case for 1931 had been shipped, and it was believed the production would be not far below that of last year. There were no carry-over bathing suits from 1930 and there will be none of this year's production, is a common deduction in the trade. There were scattered light stocks of sweaters at the beginning of the 1931 season, but these long ago were absorbed, and it seems a safe assumption that current holdings are exclusively of 1931 models and that it is the intention of distributors to have practically none in their year-end inventories.

The knitted outerwear industry has seen better days, but has gone through worse trials than that experienced thus far this year.

BONE-DRY UNSHRINKABLE WELL-FINISHED

HARD MAPLE HOSIERY BOARDS

Give you that much desired finish that cannot be obtained from any other than wooden boards.

You get the length, lustre, *feel* that the goods should have.

Our special finish is highly recommended for silk and wooden boards.

We serve the best mills—send a request for list and same will be forthcoming.

JOSEPH T. PEARSON & SON CO.
Manufacturers
Kensington and E. Boston Avenues
PHILADELPHIA, PENNA.

DO YOUR Paper Boxes *Bespeak of Quality?*

The attractiveness of the box in which your product is packed oftentime influences a sale.

The very appearance of Old Dominion boxes bespeaks of quality, for these are "individualized" boxes, made especially for your requirements, and with your own design on them you have a quality box that commands and gets attention. Our five centrally located plants can give you prompt service on your box requirements—any type or size. Samples and quotations given without obligation.

OLD DOMINION BOX COMPANY, INC.
Lynchburg, Va.
Winston-Salem, N. C. Burlington, N. C. Ashboro, N. C. Charlotte, N. C.

quality OLD DOMINION Paper Boxes

The YARN MARKET

Philadelphia, Pa., July 18, 1931.

THE BULGE in cotton served to help dealers move a considerable weight of carded yarn. But the sales were not made at figures conforming to the cost of cotton, nor were buyers able during and for some little time after the upward tendency to locate price cutters willing to let go at the relatively low rates which they were accepting before spinners began pegging up yarn on cotton advances.

Antedating by a very few days the beginning of the ascent, the equivalent of a drive for business was launched by several of the foremost distributors of sales yarns. According to market gossip at the time, they had acquired rights in the product of a small group of spinners ready to take away some of the business going to interests which were at the time underselling the market by around a cent a pound—the concessions in a few instances being reported as amounting to a cent and a half. The yarns for the drive did not, of course, last long after props were put under cotton for a spell, but the advances scored, day after day, for the raw fiber gave a stimulus to yarns, and there continued a fair amount of buying, some of it on what sellers describe as a reasonable basis. It was apparent, however, that manufacturers were not ready to buy yarns for anticipated needs, and the trade settled down for a dull summer, but little doubting that some headway had been made in lasting improvement and that, comparatively speaking, a flood of orders would be offered with the development of signs of fall briskness.

In the opinion of sellers, July disposed of the question "whether mills would buy yarns as in the past," leaving as the open question, "when" they will buy. Shipping instructions during the short period of June-July buying revealed the great cotton manufacturing industry with probably the lightest raw material reserves in years. There has since been some filling-in of the more generally used counts, and it was a revelation to some of the yarn merchants that more of the consuming mills were getting into line for negotiating trades on a basis of more nearly current values. The recessions in cotton and yarns following the July holiday left the market in what was regarded a healthy condition for the approach to fall, and meanwhile a steady day-to-day small lot business.

While the hysteria lasted, sellers were encouraged, by inquiries, to believe manufacturers had booked more business than was generally supposed to have been taken. The fever subsided in about the time it took to reach its height.

A month ago carded was being quoted on the basis of 16 cents for 10s single on cones and 18½ for two-ply warps. With the excitement abated, prices are about where they were, to a half cent higher. There seems to have been a gain in one respect—the disparity between the actual market and the figures accepted by weak interests is narrower by at least a half cent, say sellers, who contend, and most buyers concede, that yarns are too low by cents, on cost of cotton, to be expected to sell for long on so narrow a spread.

Combed peelers did not move forward and backward with cotton, in the Philadelphia market, and have continued uninteresting. According to one or two mercerizers, prices for the processed yarns are showing a loss for some mercerizers, and there are reported somewhat cumbersome stocks, mercerizers having been disappointed in the light movement in the last month. Sale prices for mercerized yarn do not, admittedly, indicate the market, in fact leaving actual price a question.

Prices quoted in Philadelphia on July 16 follow:

Single Skeins.

4s to 8s 15½	10s 16
12s 16½	14s 17
16s 17½	20s 18
24s 20½	26s 21½
30s 22½	

Single Warps.

10s 16½	12s 17
14s 17½	16s 18
20s 18½	26s 22
30s 23	

Two-Ply Skeins.

8s 16	10s 16½
12s 17	14s 17½
16s 18	20s ..... 18 @18½
24s 21	26s 22
30s 23	40s ..... 30 @31

Two-Ply Warps.

8s 17	10s 17½
12s 18	14s 18½
20s ..... 18½ @19	24s 21½
26s 22½	30s ..... 24 @24½
40s ..... 31½ @32½	

Carded Yarn on Cones.

8s ..... 15½ @16	10s 16
12s 16½	14s 17
16s 17½	18s 18
20s ..... 18½ @19	22s ..... 20 @20½
24s 21	26s 22
30s ..... 23½ @24	40s ..... 31 @31½
30s dbl. carded 29	30s tying in ..... 23½ @24

Carpet Yarns.

8s and 9s white warp twist	16 @16½
8s tinged tubes	15 @15½
8s part waste	14 @14½

Two-Ply Combed Peeler Skeins and Warps.

8s to 16s ..... 31 @32	20s 32½
24s 34½	30s 37½
40s 40	50s 45
60s 52½	70s 62½
80s 75	

Mule Spun Carded Yarn on Cones.

10s 22	12s 22½
14s 23	16s 23½
18s 24	20s 24½
24s 27	26s 28
30s 29	40s 36½

Mule Spun Combed Peeler Yarn on Cones.

10s 28	12s 29
14s 30	16s 31
18s 32	20s 34
22s 35	26s 36
28s 37	30s 38
36s 41	38s 43
40s 44	

Tinged Insulating Yarns.

8s-1 ..... 14½	8s-2 15
10s-1 15	10s-2 ..... 15½
12s-1 ..... 15½	12s-2 16
	20s-2 ..... 17½ @18
	30s-2 ..... 20½ @21